NETGEAR®

N450 WiFi Cable Modem Router Model N450/CG3000Dv2

User Manual

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350 East Plumeria Drive
San Jose, CA 95134
USA

Support

Thank you for selecting NETGEAR products.

After installing your device, locate the serial number on the label of your product and use it to register your product at *https://my.netgear.com*. You must register your product before you can use NETGEAR telephone support. NETGEAR recommends registering your product through the NETGEAR website. For product updates and web support, visit *http://support.netgear.com*.

Phone (US & Canada only): 1-888-NETGEAR.

Phone (Other Countries): Check the list of phone numbers at *http://support.netgear.com/general/contact/default.aspx*.

Compliance

For regulatory compliance information, visit *http://www.netgear.com/about/regulatory*.

See the regulatory compliance document before connecting the power supply.

Trademarks

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Connecting to the Internet

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This chapter covers the following sections:

- *Unpack Your Modem Router*
- *Hardware Features*
- *Label*
- *Position Your Modem Router*
- *Cable Your Modem Router*
- *Connect Computer to the Modem Router*
- *Log In to Your Modem Router*
- *View Basic Settings*
- *Notify Your Internet Service Provider*

For more information about the topics covered in this manual, visit the support website at *http://support.netgear.com*.

Firmware updates with new features and bug fixes are made available from time to time on *downloadcenter.netgear.com*. Some products can regularly check the site and download new firmware, or you can check for and download new firmware manually. If the features or behavior of your product do not match what is described in this guide, you might need to update your firmware.

Unpack Your Modem Router

Open the box and remove the modem router, ethernet cable, power adapter, and installation guide,

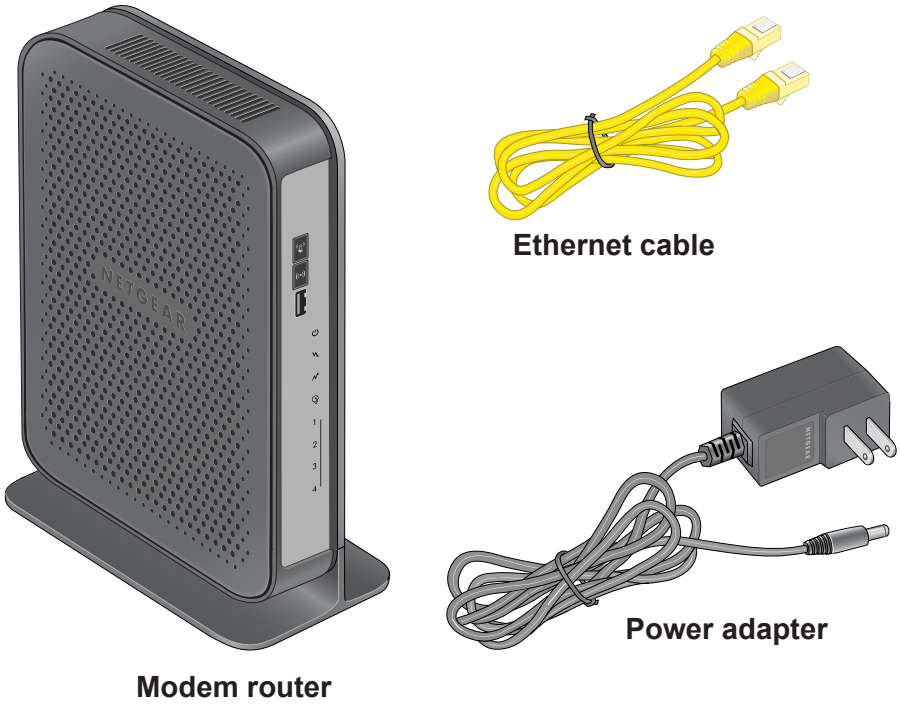


Figure 1. Package contents

You box contains the following items:

- N450/CG3000Dv2 WiFi Cable Modem Router
- Ethernet cable
- AC power adapter (varies by region)
- Installation guide

Hardware Features

Before you cable your router, take a moment to become familiar with the front and back panels. Pay particular attention to the LEDs on the front panel.

Front Panel

The router front panel has the following status LEDs and buttons:

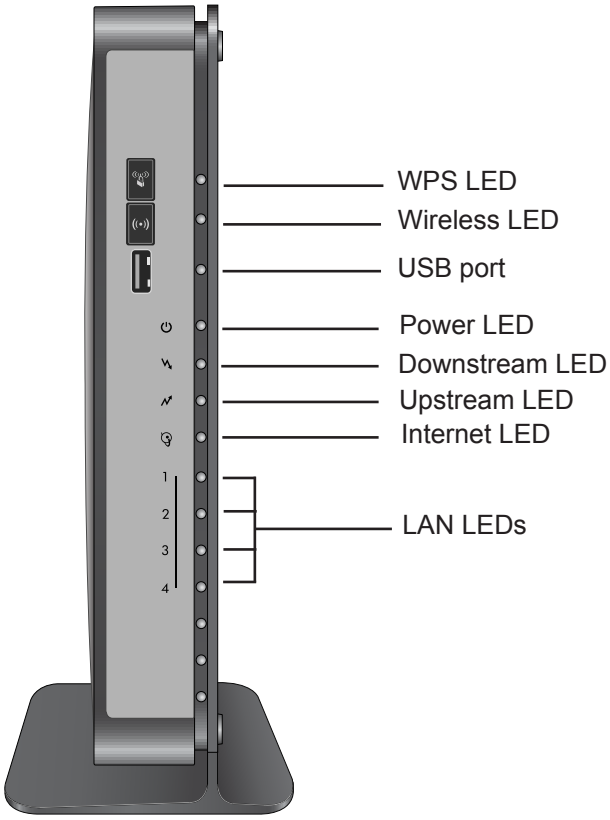


Figure 2. Modem router front view

You can use the LEDs to verify status and connections. The following table lists and describes each LED and button on the front panel of the modem router.

Table 1. LEDs and buttons

LED	Description
Power	• **Solid green**. The modem router has power. • **Blinking green**. The modem router is powering on. • **Blinking red**. The modem router is performing a self-test or the thermal cutoff circuit has been triggered. • **Off**. The modem router is not receiving power.
Downstream	• **Solid blue**. More than one downstream channel is locked. • **Solid green**. One downstream channel is locked. • **Blinking green**. The modem router is scanning for a downstream channel. • **Off**. No downstream channel is locked.

Table 1. LEDs and buttons

LED	Description
 Upstream	• **Solid blue**. More than one upstream channel is locked. • **Solid green**. One upstream channel is locked. • **Blinking green**. The unit is ranging on the upstream. • **Off**. No downstream channel is locked.
 Internet	• **Solid green**. The modem router is connected to the Internet. • **Slow blink**. The modem router is receiving DHCP information. • **Fast blink**. The modem router is downloading the configuration file. • **Off**. The modem router is not connected to the Internet.
 LAN	Green indicates 1,000/100 Mbps. Amber indicates 10 Mbps. • **Solid**. A power-on device is connected to the LAN port. • **Blinking**. The LAN port is transmitting or receiving data. • **Off**. No device is connected to a LAN port.
 Wireless On/Off	Pressing this button for three seconds turns on the wireless radio. • **Solid green**. The wireless radio is operating. • **Blinking green**. Data is being transmitted or received over the WiFi link. • **Off**. The wireless radio is off.
 WPS	Pressing this button opens a two-minute window for the modem router to connect with other WPS-enabled devices. For more information, about using the WPS method to implement security, see the *Use WPS Wireless Setup* on page 20.

Back Panel

The back panel has the following ports, button, and connector:

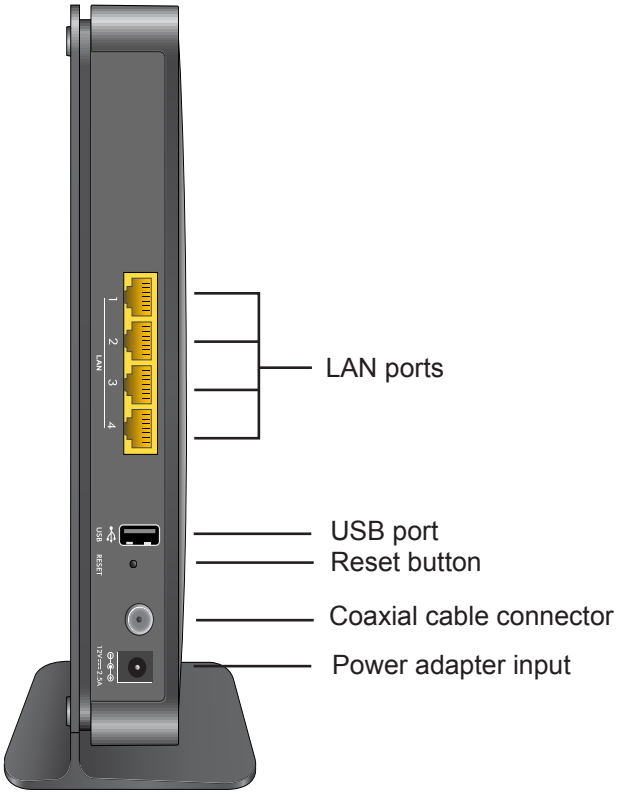


Figure 3. Modem router rear panel

The rear panel includes the following connectors and button, viewed from top to bottom:

- **Four Gigabit LAN ports**. To connect local computers, use these ports.
- **USB port**. To connect a USB hard drive, flash drive, or printer, use this port.
- **Reset**. To set the modem router to the original factory settings, press and hold the **Reset** button for over seven seconds. See *Factory Default Settings* on page 86.
- **Coaxial cable connector**. Attach a coaxial cable to the cable service provider's connection.
- **Power**. Power adapter input.

Label

The label on the modem router shows the router's WiFi network name (SSID), password, serial number, and MAC address.

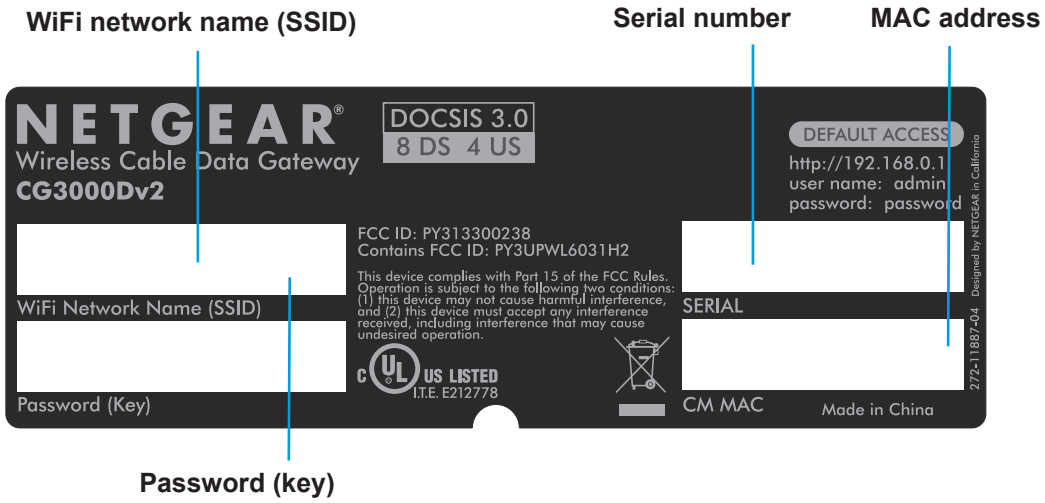


Figure 4. Label

For information about the Restore Factory Settings button and the factory setting values, see *Factory Default Settings* on page 86.

Position Your Modem Router

The modem router lets you access your network anywhere within the operating range of your wireless network. However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your modem router. For example, the thickness and number of walls the wireless signal passes through can limit the range.

Additionally, other wireless access points in and around your home might affect your modem router's signal. Wireless access points are modem routers, repeaters, WiFi range extenders, or any other device that emits a wireless signal for network access.

➢ **To position your modem router:**

1. Place your modem router near the center of the area where your computers and other devices operate, and within line of sight to your wireless devices.
2. Make sure that the modem router is within reach of an AC power outlet and near Ethernet cables for wired computers.
3. Place the modem router in an elevated location, minimizing the number walls and ceilings between the modem router and your other devices.
4. Place the modem router away from electrical devices such as these:
   - Ceiling fans

- Home security systems
- Microwaves
- Computers
- Base of a cordless phone
- 2.4 GHz cordless phone

5. Place the modem router away from large metal surfaces, large glass surfaces, and insulated walls such as these:
   - Solid metal door
   - Aluminum studs
   - Fish tanks
   - Mirrors
   - Brick
   - Concrete

Cable Your Modem Router

The following figure shows how to cable your modem router:

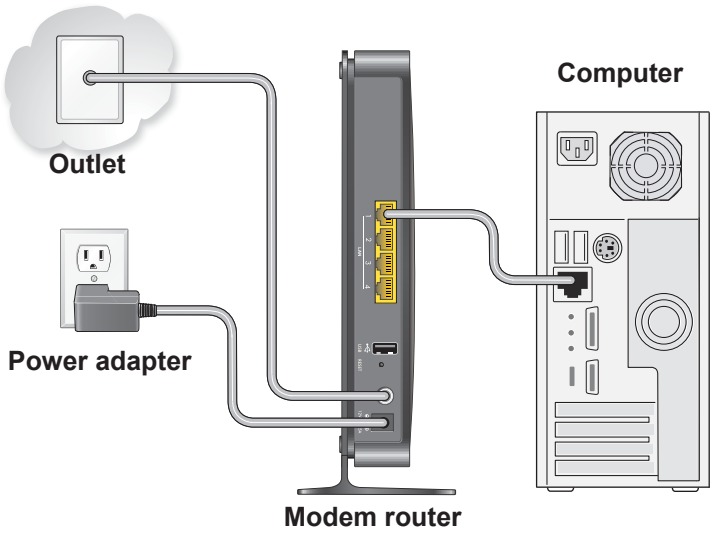


Figure 5. Cable your modem router

➢ **To cable your modem router:**

6. Connect the cable port on the modem router to your cable line splitter or outlet.

   Use the coaxial cable from your cable company.

Note: If Charter is your cable Internet service provider, Charter recommends connecting your modem router directly to an outlet. If you must use a splitter, use a splitter that is rated at 3.5 dBmv.

7. Connect the power adapter to the modem router.
8. Plug the other end of the power adapter into an electrical outlet.
9. Wait about 50 seconds for the modem router to start.

   The Internet LED blinks, then turns solid green, indicating that a link was established to the cable network.

   For information about LEDs, see *Front Panel* on page 7.
10. Connect a computer or WiFi device to the modem router.

    For more information, see *Connect Computer to the Modem Router* on page 12.

Connect Computer to the Modem Router

You can connect your computer or mobile device (such as a smartphone or gaming device) to the modem router's WiFi network through a wired or WiFi connection.

Wired Connection

You can connect your computer to the modem router using an Ethernet cable and join the modem router's local area network (LAN).

➢ **To connect your computer to the modem router with an Ethernet cable:**

1. Make sure that the modem router has power (its Power LED is lit).
2. Connect an Ethernet cable to a LAN port on your computer.
3. Connect the other end of the Ethernet cable to one of the numbered LAN ports.

   Your computer connects to the local area network (LAN). A message might display on your computer screen to notify you that an Ethernet cable is connected.

WiFi Connection

You can connect to the modem router's WiFi network with Wi-Fi Protected Setup (WPS) or you can find and select the WiFi network.

➢ **To use WPS to connect to the WiFi network:**

1. Make sure that the modem router has power (its Power LED is lit).
2. Check the WPS instructions for your computer or mobile device.
3. Press the **WPS** button on the modem router.

4. Within two minutes, on your computer or mobile device, press its **WPS** button or follow its instructions for WPS connections.

   Your computer or mobile device connects to the WiFi network.

➢ **To find and select the WiFi network:**

1. Make sure that the modem router has power (its Power LED is lit).
2. On your computer or mobile device, find and select the WiFi network.

   The WiFi network name is on the modem router's label.

3. Join the WiFi network and enter the WiFi password.

   The password is on the modem router's label.

   Your computer or mobile device connects to the WiFi network.

Log In to Your Modem Router

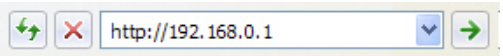
Log in to the modem router to view or change its settings.

Note: To connect to the modem router, use a computer configured for DHCP (most computers are). For help with configuring DHCP, see the instructions that came with your computer.

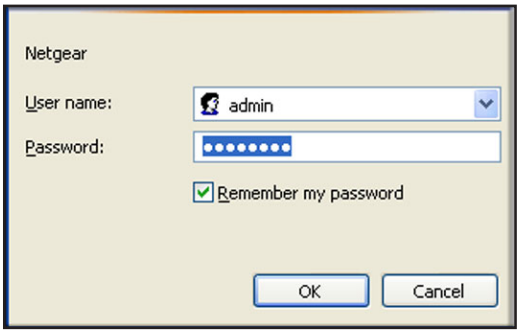
If you do not click the **Logout** button, when you have logged in, the modem router waits for activity for five minutes before it automatically logs you out.

➢ **To log in to the modem router:**

1. Type **http://192.168.0.1** in the address field of your web browser.

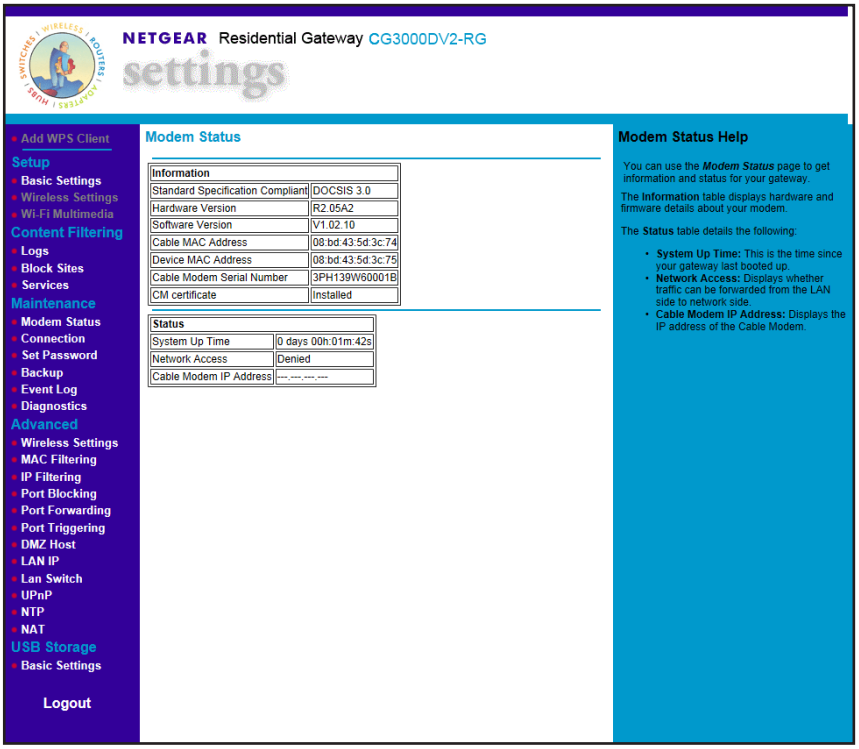
   A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The modem router main menu displays.



View Basic Settings

You can view or change the Internet settings for the modem router.

➢ **To view or configure basic settings:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

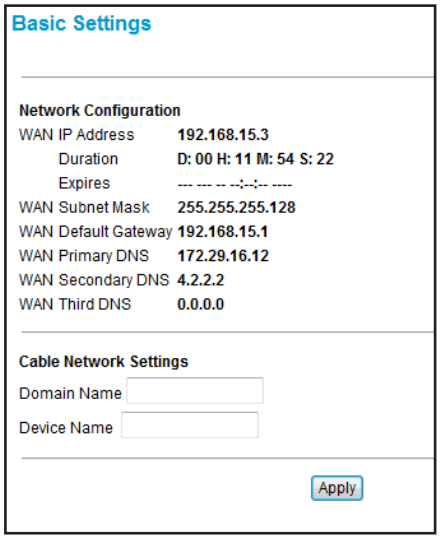
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. From the main menu, select **Basic Settings**.

   The Basic Settings screen displays:



4. If your Internet service provider requires a domain name, enter the domain name in the **Domain Name** field.
5. Enter the device name in the **Device Name** field.

   This name is a user-friendly name representing the modem router in the network computers running Windows Vista and the Network Explorer on all other Windows computers.

6. Click the **Apply** button.

   Your changes are saved.

Notify Your Internet Service Provider

You must contact your Internet service provider (ISP) and tell them that you are using the modem router.

1. Contact your cable ISP and inform them that you are installing a new modem router that you bought from a retail store.

   Provide your cable ISP with the modem router's model number, which is CG3000Dv2.

Note: The modem router is certified by all major cable ISPs.

You can also visit your cable ISP's website and follow the onscreen instructions to set up your Internet service.

Cable ISP	Contact Information
Cablevision	*www.cablevision.com* *www.optimum.com/contactus.jsp*
Charter	1-888-438-2427 *https://install.charter.com/*
Comcast	1-800-COMCAST (1-800-266-2278) *https://www.comcast.com/activate/*
Cox	1-877-891-2899 *ww2.cox.com*
Optimum	*http://play.optimum.net* *https://www.optimum.net/support/phone-list/*
Time Warner Cable	1-800-892-2253 *http://www.timewarnercable.com/*

Note: The contact information listed might change. You can also find the contact number in your monthly Internet service billing statement.

2. When asked, provide the modem router's serial number and MAC address located on the product label on the modem router.

   For more information, see *Label* on page 10.

3. Wait for your cable ISP to confirm that your modem router is active.
4. If you do not have an Internet connection with the modem router, ask your cable ISP to look for your modem router online, and do one of the following depending on what your cable ISP tells you about your modem router:
   - If the modem routeris not visible, your cable ISP can give you instructions to verify why the modem routerdoes not connect with your high-speed Internet service.
   - If your cable Internet service provider can confirm that the modem router is visible, reboot the computer that is connected to the modem router. Try checking your online status again.

Configuring Your Wireless Network

2

This chapter covers the following sections:

- *Set Up Your Wireless Network*
- *Set Up Wi-Fi Multimedia*
- *Change the Password*

Note: Before changing wireless settings, connect the modem router and set up its Internet connection as described in the *N450 WiFi Cable Modem Router N450/CG3000Dv2 Installation Guide*.

Set Up Your Wireless Network

To set up the wireless network, you can enter the wireless settings manually, or you can use Wi-Fi Protected Setup (WPS). To wirelessly connect to the modem router, a computer or wireless device must be configured with the same wireless settings as the modem router.

Configure Wireless Settings Manually

You can manually configure the wireless settings and security in the Wireless Settings screen.

➢ **To view or configure the wireless settings:**

1. Use an Ethernet cable to connect your computer to a LAN port on the modem router.

   Note: If you connect wirelessly to the modem router and then change its wireless network name (SSID) or wireless security, you are disconnected after you click the **Apply** button on the Wireless Settings screen.

2. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

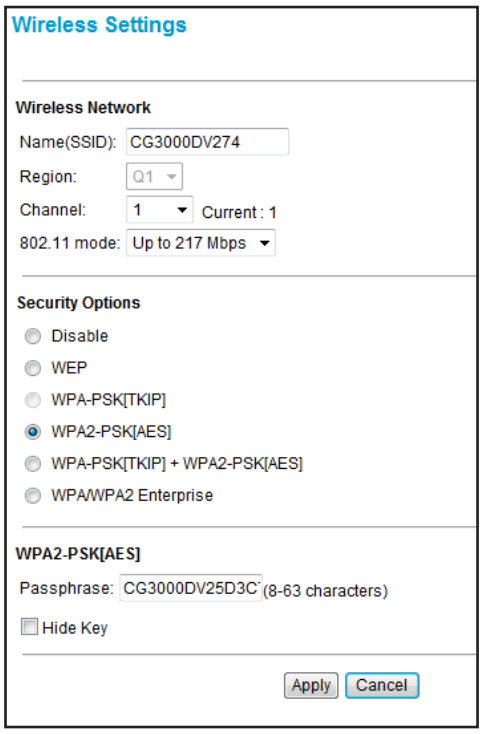
3. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

4. In the main menu, under Setup, select **Wireless Settings**.

The following screen displays:



5. Specify the Wireless Network settings for your network:
   - **Name (SSID)**. The name of the wireless network.

     The default wireless network name (SSID) for the modem router appears on the label of the modem router. You can enter a different name here for better wireless security and to make it easier to recognize your network when you want to connect to it wirelessly.
   - **Region**. The location where the modem router operates.
   - **Channel**. The available channels depend on the region. Some countries have laws specifying which channels should be used. To reduce interference when using more than one access point, NETGEAR recommends using five-channel spacing between adjacent access points (for example, use Channels 1 and 6, or 6 and 11).
   - **802.11 Mode**. This value is set to **Up to 217 Mbps** by default. You can specify the mode to support faster equipment or legacy equipment.
6. Specify the security options:

   By default the modem router works with WPA and WPA 2 wireless security. You can specify the network key, which works like a password to access the wireless network.

   a. Set up WPA or WPA2 wireless security. Select one of the following radio buttons:
      - **WPA-PSK**. This setting provides the TKIP encryption type and a pre-shared key.
      - **WPA2-PSK**. This setting provides the AES encryption type and a pre-shared key.

Note: Configure your wireless computers with the same WPA2 or WPA settings as your modem router so that you can connect.

b. Depending on the WPA setting that you select, enter the required information.

For WPA-PSK or WPA2-PSK, enter the pre-shared key, which is a password between 8 and 63 characters. The default WPA password appears on the label of your modem router.

Note: By default, the modem router is set up to work with WPA and WPA2 wireless security, both of which are newer than WEP. Typically, the only reason you might need to set up WEP would be to allow access to older wireless computers or devices that cannot support WPA.

7. Click the **Apply** button.

Note: If you plan to use WPS, and you want to keep your wireless settings the same, go to the Advance Wireless Settings screen and make sure that the **Keep Existing Settings** check box is selected. See *Advanced Wireless Settings* on page 52.

Use WPS Wireless Setup

Wi-Fi Protected Setup (WPS) can be a quick way to automatically set up your modem router's wireless network and set up your wireless computer to connect to it at the same time. WPS is relatively new technology, so before you decide to use it, check to make sure that your wireless computers and devices support WPS. NETGEAR calls WPS Push 'N' Connect.

Look for the WPS symbol on all the computers that connect wirelessly to the modem router. If you do not see the WPS symbol on all the computers that connect to the wireless network, then you should manually set up your network first (see *Configure Wireless Settings Manually* on page 18). After that, you can still use WPS to set up the wireless connection for the computers that support WPS.

Note: All WPS-capable products should be compatible with the modem router. For more information about the WPS standard, visit *http://www.wi-fi.org*).

Two Push 'N' Connect methods are available, WPS button and PIN (personal identification number).

Add a Client Using the WPS Button

Note: The first time you use WPS, it assigns a random network name (SSID) and a random password to your wireless network. If you want to keep the network name and password you specified in the Wireless Settings screen, you must select the **Keep Existing Settings** check box in the Advanced Wireless Settings screen. See *Advanced Wireless Settings* on page 52.

A client is a computer or mobile device that connects wirelessly to the modem router. After a device is added as a client, it can automatically connect to the modem router.

➢ **To add a client to your modem router using the WPS button:**

1. Make sure that you know how WPS works on your client.

   If it works with WPS, it has a WPS utility and might also have a WPS button that you can press.

2. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

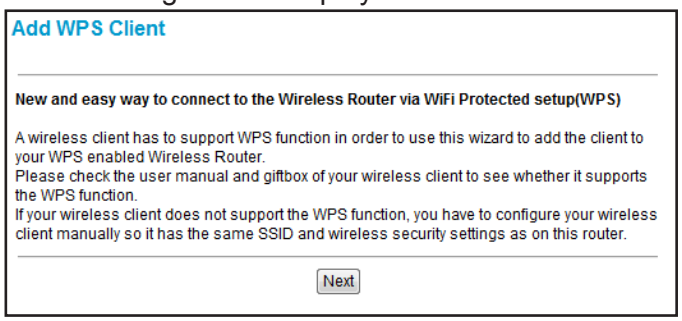
3. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

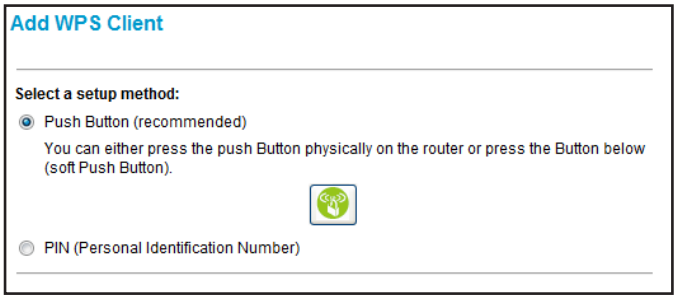
4. In the main menu, select **Add WPS Client**.

The following screen displays:

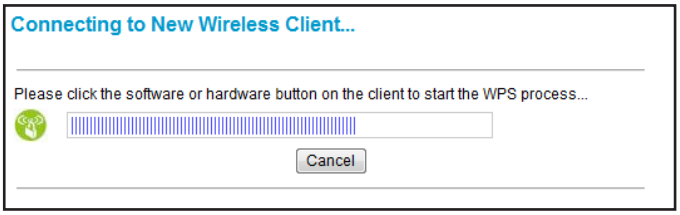


5. Click the **Next** button.

   The following screen displays:



6. Either click the **WPS** button on the screen, or press the **WPS** button on the front of the modem router.



   The following occurs:

   - The WPS LED on the front of the modem router begins to blink.
   - The modem router tries to communicate with the wireless computer or device for two minutes.
   - If the security option in the Wireless Settings screen was set to **Disable**, it is automatically changed to **WPA-PSK [TKIP] + WPA2-PSK [AES]**, including a random wireless security password.

7. Go to the computer or mobile device, and run its WPS configuration utility.
8. To click the **WPS** button, follow the utility's instructions.

   When the computer or mobile device connects to the wireless network, the modem router sends its SSID and WPA-PSK or WPA2-PSK configuration to that computer.

9. On the computer that just joined the wireless network, make sure that you can connect to the Internet.

The modem router's Internet LED blinks, showing that the Internet connection is in use.

Add a Client Using a PIN

A client is a computer or mobile device that connects wirelessly to the modem router. After a device is added as a client, it can automatically connect to the modem router.

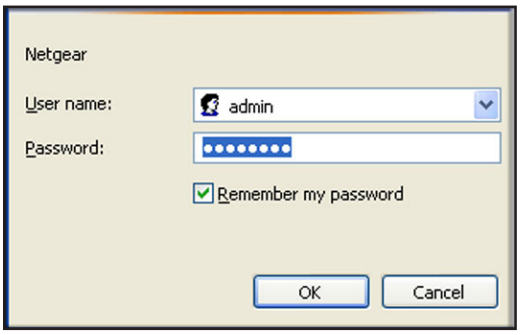
➢ **To add a client to your modem router using a PIN:**

1. Make sure that you know how WPS works on your computer or mobile device.

   If it works with WPS, it has a WPS utility. To determine the PIN for your mobile computer or device, use this utility.

2. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.



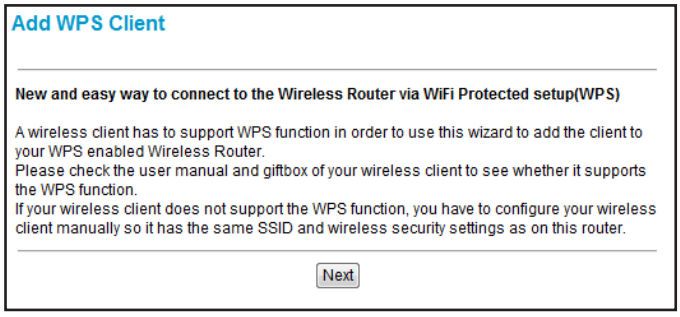
3. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

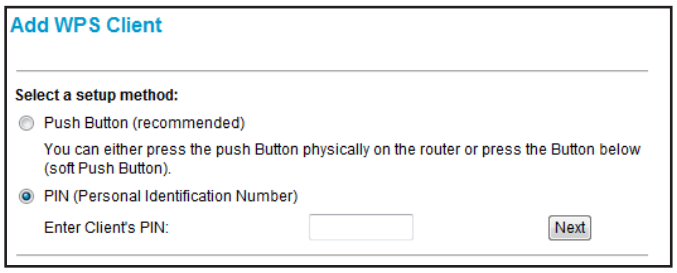
4. In the main menu, select **Add WPS Client**.

   The following screen displays:



5. Click the **Next** button.

The following screen displays:



6. Select the **PIN** radio button.
7. In the **Enter Client's PIN** field, type the PIN that you located in Step 1.
8. Click the **Next** button.

   The following occurs:

   - The WPS LED on the front of the modem router begins to blink.
   - The modem router tries to communicate with the wireless computer or device for four minutes.
   - If the security option in the Wireless Settings screen was set to **Disable**, it is automatically changed to **WPA-PSK** (including a PSK security password).

   When the computer connects to the wireless network, the modem router sends its SSID and WPA-PSK or WPA2-PSK configuration to that computer.
9. On the computer that just joined the wireless network, make sure you can connect to the Internet.

   The modem router's Internet LED blinks, showing that the Internet connection is in use.

Set Up Wi-Fi Multimedia

Wi-Fi Multimedia (WMM) provides basic Quality of Service (QoS) features to IEEE 802.11 networks. WMM prioritizes traffic according to four access categories: voice, video, best effort, and background. It does not, however, provide guaranteed throughput. You can use the Wi-Fi Multimedia screen to set up wireless multimedia Quality of Service (QoS).

➢ **To set up Wi-Fi Multimedia:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

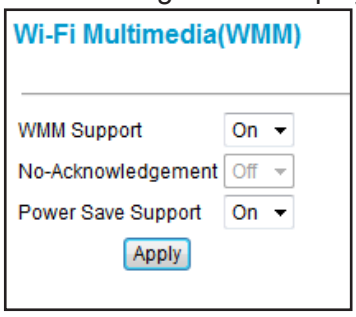
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Setup, select **Wi-Fi Multimedia**.

   The following screen displays:



4. Specify the Wi-Fi Multimedia setting for the network:
   - **WMM Support**. Select **On** to enable WMM.
   - **No-Acknowledgement**. Select **Off** if you want to use Acknowledgement (ACK) messages. Select **On** if you do not want to use acknowledgement messages.

     Usually, **Off** is selected. If wireless communication quality is poor at your location, select **On** so that you are notified when a package is lost. High interference levels can cause poor communication.

   - **Power Save Support**. To conserve battery power in smaller devices that are connected to the modem router, select **On**.

5. Click the **Apply** button.

   Your changes are saved.

Change the Password

For security reasons, the modem router has its own user name and password. NETGEAR recommends that you change the default password to a more secure password. The ideal

password contains no dictionary words from any language, and is a mixture of both uppercase and lowercase letters, numbers, and symbols. Passwords can contain up to 30 characters.

➢ **To change the password:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

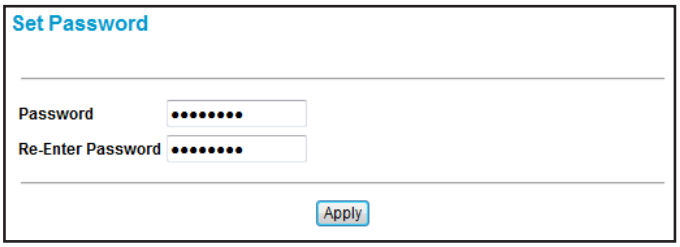
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Maintenance, select **Set Password**.

   The following screen displays:



4. Enter the new password twice.
5. Click the **Apply** button.

   Your changes are saved.

Note: After changing the password, you are required to log in again to continue the configuration. If you have backed up the modem router settings previously, create a new backup so that the saved settings file includes the updated password.

Filtering Content

3

This chapter covers the following sections:

- *View Denial of Service Attack Logs*
- *Limit Internet Site Access*
- *Allow Unrestricted Access*
- *Enable or Disable Modem Router Features*

View Denial of Service Attack Logs

A content filter log is a detailed record of the denial of service (DoS) attacks directed at your network. You can set up email notification or you can view the logs on the modem router.

➢ **To view or set up notification of attacks by email:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

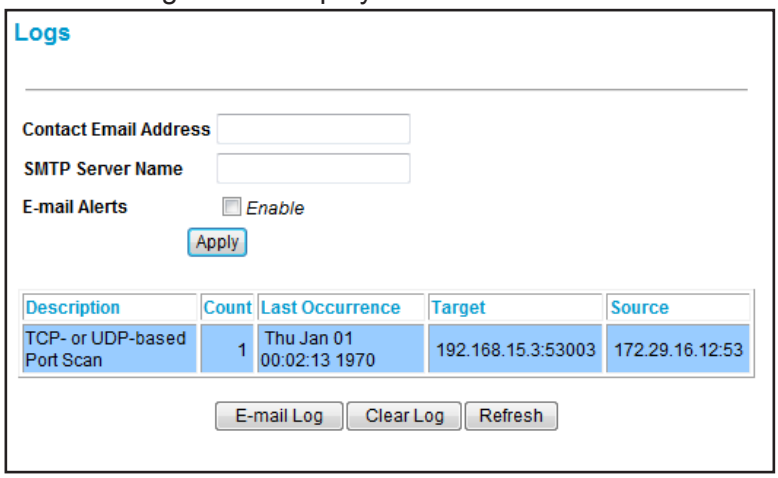
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Logs**.

   The following screen displays:



4. Enter an email address.

   This address is the full email address to which you want the modem router to send logs.

5. Enter the SMTP server name.

Type the outgoing SMTP mail server of your ISP. If you leave this field blank, the modem router does not send logs.

6. Select the E-mail Alerts **Enable** check box.
7. Click the **Apply** button.
8. Perform any of the following actions:
   - To refresh the display, click the **Refresh** button.
   - To send the log to the contact email address, click the **E-mail Log** button.
   - To clear the log entries from the display, click the **Clear Log** button.

Limit Internet Site Access

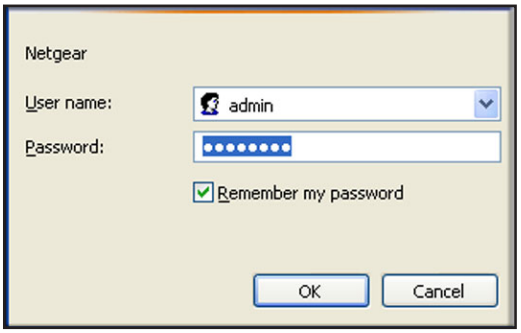
You can establish rules to limit access to certain Internet websites in one of two ways:

- Blocking sites that contain certain words (like profanity or explicit sexual material)
- Blocking access to certain domains (for example, adultXXXsiteXXX.com)

➢ **To block access to sites containing certain words:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.



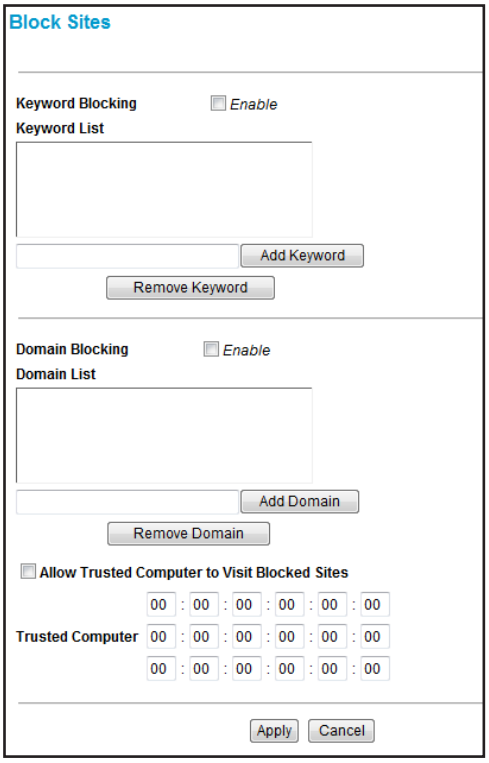
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Block Sites**.

The following screen displays:



4. Select the Keyword Blocking **Enable** check box.
5. In the keyword list field, enter the words you want to block.
6. Click the **Add Keyword** button.

   The keyword is added to the **Keyword List**.
7. Click the **Apply** button.

   Keyword blocking takes effect.

➢ **To allow a keyword that was previously blocked:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

2. Enter the modem router user name and password.

The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Block Sites**.

   The Block Sites screen displays.

4. Select a keyword from the keyword list.
5. Click the **Remove Keyword** button.

   The keyword is removed from the list.

6. Click the **Apply** button.

   Your changes are saved.

➢ **To block access to certain domains:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

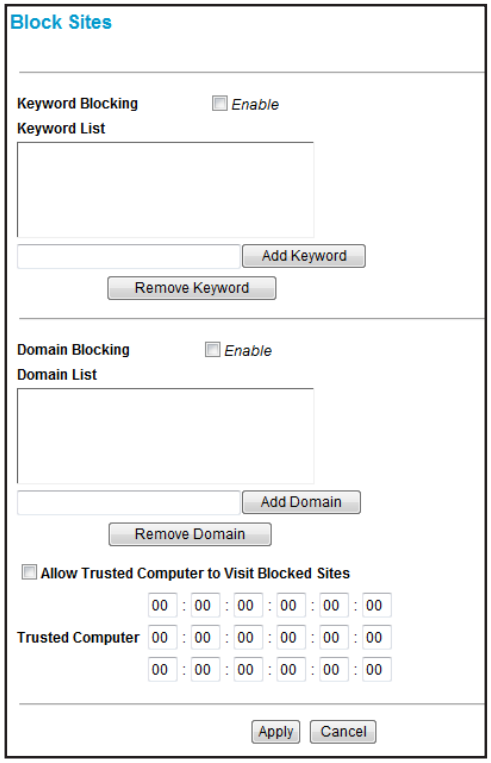
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Block Sites**.

The following screen displays:



4. Select the Domain Blocking **Enable** check box.
5. In the domain list field, enter the domain you want to block.
6. Click the **Add Domain** button.

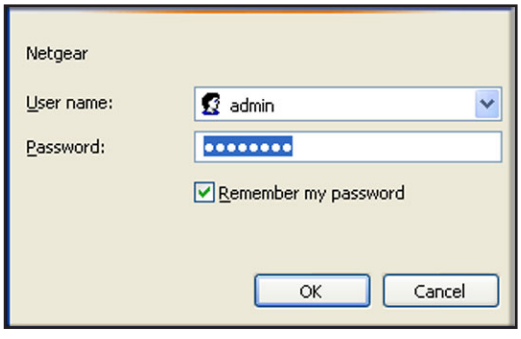
   The domain is added to the **Domain List**.
7. Click the **Apply** button.

   Domain blocking takes effect.

➢ **To unblock a domain:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.



2. Enter the modem router user name and password.

The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Block Sites**.

   The Block Sites screen displays.

4. Select a domain name from the **Domain List**.
5. Click the **Remove Domain** button.

   The domain is removed from the list.

6. Click the **Apply** button.

   Your changes are saved.

Allow Unrestricted Access

You can specify up to three computers to have unrestricted access to the Internet.

➢ **To allow unrestricted access:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

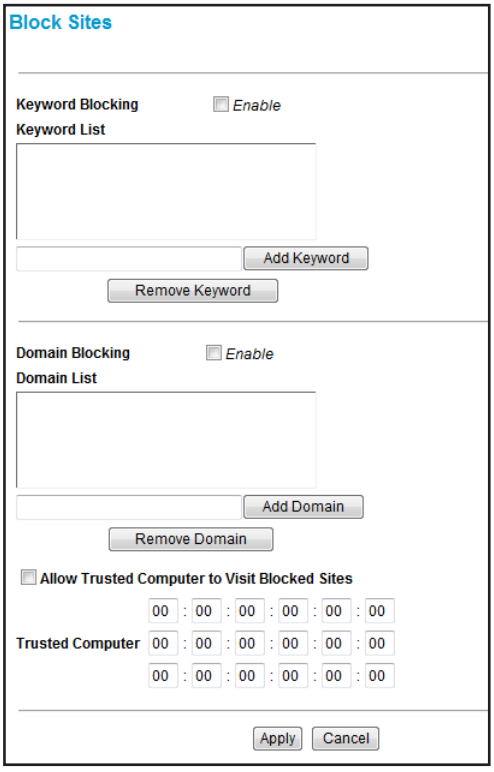
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Block Sites**.

The following screen displays:



4. Select the **Allow Trusted Computer to Visit Blocked Sites** check box.
5. Enter the MAC address of each computer.
6. Click the **Apply** button.

Enable or Disable Modem Router Features

You can enable or disable the following types of modem router features:

- Firewall features
  - IPSec PassThrough
  - PPTP PassThrough
  - Mulitcast
  - Port Scan Detection
  - IP Flood Detection
- Web features
  - Filter Proxy
  - Filter Cookies
  - Filter Java Applets
  - Filter ActiveX

  - Filer Popup Windows
- NAT ALG status features
  - RSVP
  - FTP
  - TFTP
  - kerb88
  - NetBios
  - IKE
  - RTSP
  - Kerb1293
  - H225
  - PPTP
  - MSN
  - SIP
  - ICQ
  - IRC666x
  - ICQTalk
  - Net2Phone
  - IRC7000

➢ **To enable or disable specific firewall features:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

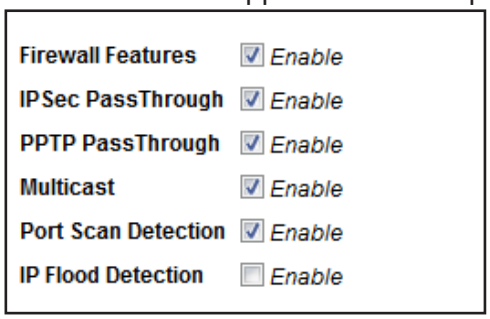
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Services**.

Firewall features appear near the top of the screen.



4. Do one of the following:
   - To enable a firewall feature, select the check box next to the feature.
   - To disable a firewall feature, clear the check box next to the feature.
5. Click the **Apply** button.

   Your changes are saved.

   The following table describes the fields displayed in this screen.

Feature	Description
Firewall	• **Enable**. The modem router performs stateful packet inspection (SPI). • **Disable**. The modem router does not perform SPI.
IPSec Pass-Through	• **Enable**. The modem router forwards IPS traffic. • **Disable**. The modem router blocks traffic.
PPTP Pass-Through	• **Enable**. The modem router forwards PPTP traffic. • **Disable**. The modem router blocks PPTP traffic.
Multicast	• **Enable**. The modem router passes multicasting streams through the firewall. • **Disable**. The modem router blocks multicasting streams.
Port Scan Detection	• **Enable**. The modem router responds to Internet-based port scans. • **Disable**. The modem router does not respond to Internet-based port scans.
IP Flood Detection	• **Enable**. The modem router blocks malicious devices that are attempting to flood devices. • **Disable**. The modem router does not block malicious devices.

➢ **To enable or disable specific web features:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

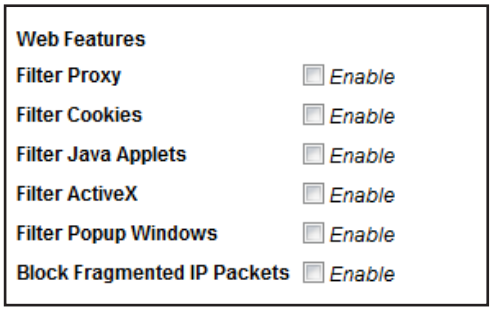
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Services**.

   Web features appear near the middle of the screen.



4. Do one of the following:
   - To enable a web feature, select the check box next to the feature.
   - To disable a web feature, clear the check box next to the feature.
5. Click the **Apply** button.

   Your changes are saved.

➢ **To enable or disable specific NAT ALG Status features:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

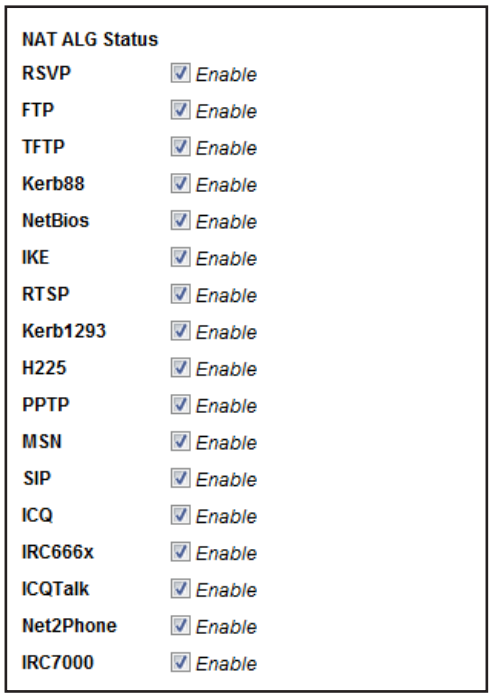
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Content Filtering, select **Services**.

   NAT ALG Status features appear near the bottom of the screen.



4. Do one of the following:
   - To enable a web feature, select the check box next to the feature.
   - To disable a web feature, clear the check box next to the feature.
5. Click the **Apply** button.

   Your changes are saved.

Maintaining Your Network

4

This chapter includes the following sections:

View the Modem Router Status

You can view hardware and firmware details and basic status information about the modem router.

➢ **To view the modem router status:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

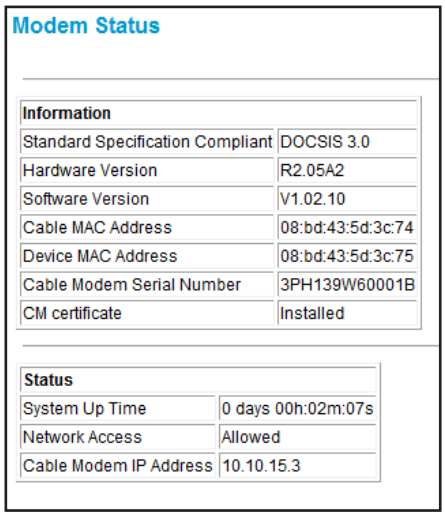
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. From the main menu, under Maintenance, select **Modem Status**.

   The following screen displays:



The following table describes the fields displayed in this screen:

Modem Field	Description
Standard Specification Compliant	DOCSIS 3.0
Hardware Version	The hardware version of the modem router.
Software Version	The version of firmware currently running on the modem router.
Cable MAC Address	The MAC address used by the cable modem port of the modem router. This MAC address might need to be registered with your cable service provider.
Device MAC Address	The WAN MAC address used by the device.
Cable Modem Serial Number	The serial number of the modem router hardware.
CM certificate	If the cable modem certificate is installed, it is possible for the service provider to upgrade your Data Over Cable service securely.
System Up Time	Time since the last boot-up.
Network Access	Shows whether traffic can be forwarded from the LAN to the network.
Cable Modem IP Address	The current Internet IP address. If assigned dynamically and not connected to the Internet, this field is blank.

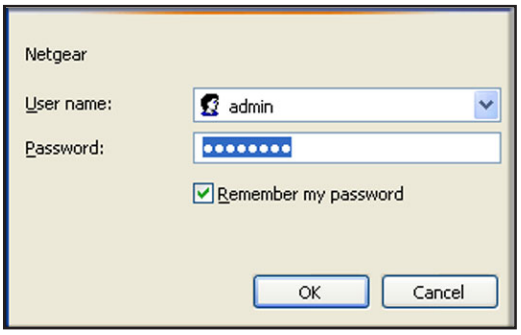
View the Connection Status

You can track the modem router's initialization procedure, and get details about the downstream and upstream cable channel. The time appears after the modem router is initialized.

➢ **To view the modem router's initialization procedure:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.



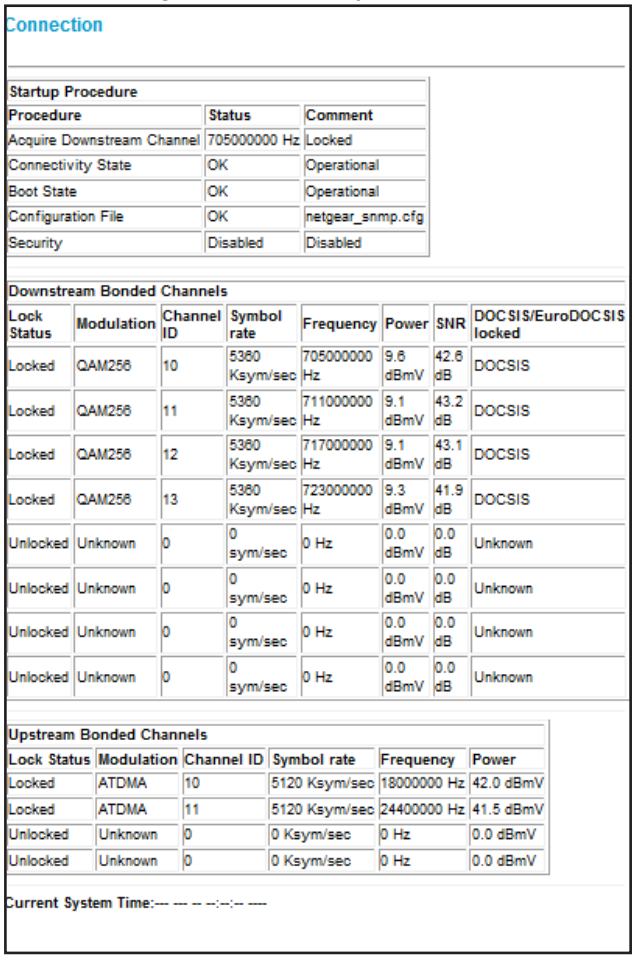
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The modem router main menu displays.

3. In the main menu, under Maintenance, select **Connection**.

   The following screen displays:



Connection

Startup Procedure

Procedure	Status	Comment
Acquire Downstream Channel	705000000 Hz	Locked
Connectivity State	OK	Operational
Boot State	OK	Operational
Configuration File	OK	netgear_snmp.cfg
Security	Disabled	Disabled

Downstream Bonded Channels

Lock Status	Modulation	Channel ID	Symbol rate	Frequency	Power	SNR	DOCSIS/EuroDOCSIS locked
Locked	QAM256	10	5360 Ksym/sec	705000000 Hz	9.6 dBmV	42.6 dB	DOCSIS
Locked	QAM256	11	5360 Ksym/sec	711000000 Hz	9.1 dBmV	43.2 dB	DOCSIS
Locked	QAM256	12	5360 Ksym/sec	717000000 Hz	9.1 dBmV	43.1 dB	DOCSIS
Locked	QAM256	13	5360 Ksym/sec	723000000 Hz	9.3 dBmV	41.9 dB	DOCSIS
Unlocked	Unknown	0	0 sym/sec	0 Hz	0.0 dBmV	0.0 dB	Unknown
Unlocked	Unknown	0	0 sym/sec	0 Hz	0.0 dBmV	0.0 dB	Unknown
Unlocked	Unknown	0	0 sym/sec	0 Hz	0.0 dBmV	0.0 dB	Unknown
Unlocked	Unknown	0	0 sym/sec	0 Hz	0.0 dBmV	0.0 dB	Unknown

Upstream Bonded Channels

Lock Status	Modulation	Channel ID	Symbol rate	Frequency	Power
Locked	ATDMA	10	5120 Ksym/sec	18000000 Hz	42.0 dBmV
Locked	ATDMA	11	5120 Ksym/sec	24400000 Hz	41.5 dBmV
Unlocked	Unknown	0	0 Ksym/sec	0 Hz	0.0 dBmV
Unlocked	Unknown	0	0 Ksym/sec	0 Hz	0.0 dBmV

Current System Time:--- --- -- --:--:-- ----

The modem router automatically goes through the following steps in the provisioning process:

- Scans and locks the downstream frequency and links back in the upstream direction.
- Obtains a modem router IP address for the modem router itself.
- Assigns an IP address for the connected computer.
- Connects to the Internet.

Back Up and Restore Your Settings

The configuration settings of the modem router are stored in a configuration file in the modem router.

➢ **To back up the settings:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

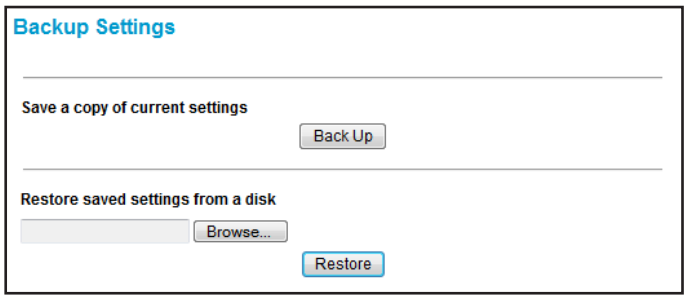
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Maintenance, select **Backup**.

   The following screen displays:



4. Click the **Back Up** button.

   If you did not set up your browser to save downloaded files automatically, indicate where you want to save the file and click the **Save** button.

   If you did set up your browser to save downloaded files automatically, the file is saved to the browser's download location on the hard drive.

➢ **To restore the backup settings:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

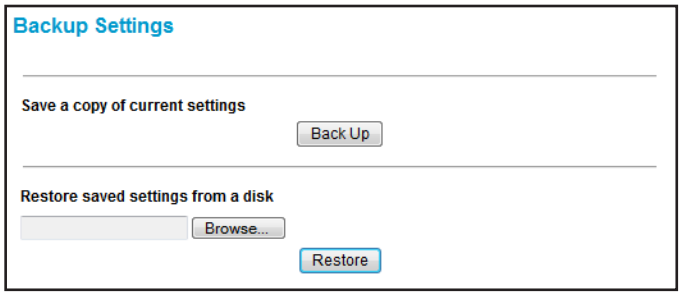
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Maintenance, select the **Back Up** button.

   The following screen displays:



4. Click the **Browse** button.
5. Locate and select the previously saved backup file, then click the **Restore** button.

   A message notifies you when the modem router has been restored to the previous settings. Then the modem router restarts, which takes about one minute.

Note: When restoring configuration settings, do not interrupt the process by going online, turning off the modem router, or shutting down the computer.

View the Event Log

The modem router logs security-related events such as denied incoming service requests and hacker probes.

➢ **To view or clear the event log:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

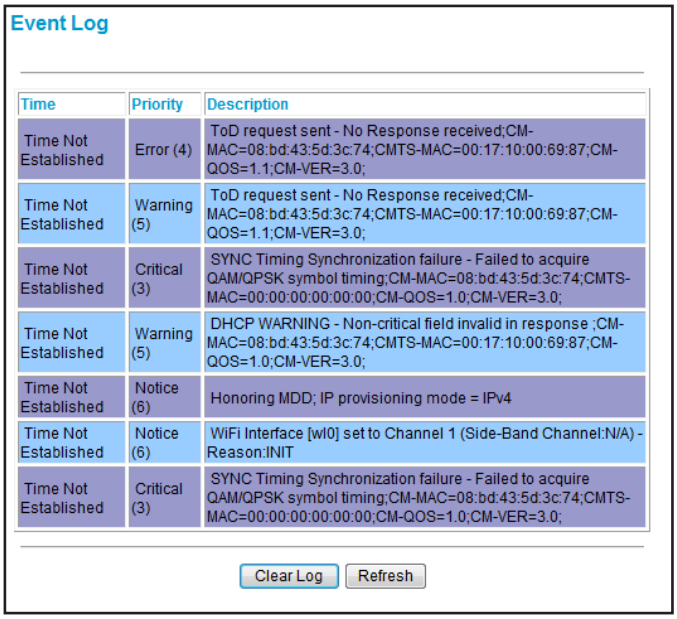
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Maintenance, select **Event Log**.

   The following screen displays:



4. Do one of the following:
   - To clear the log, click the **Clear Log** button.
   - To refresh the log, click the **Refresh** button.

Run the Diagnostic Utilities

You can run ping and traceroute utilities.

Ping Utility

Ping is an administration utility that tests whether a computer on the network is reachable and measures the time it takes messages sent from the originating device to reach a destination computer and return.

➢ **To run a ping test:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

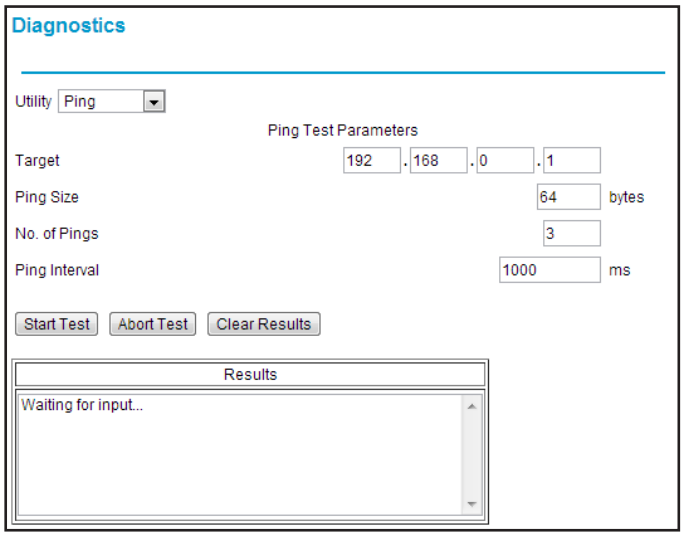
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

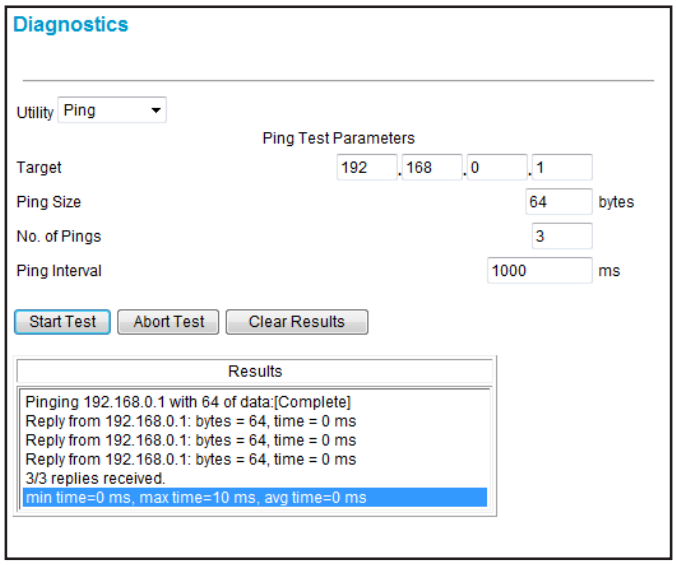
3. In the main menu, under Maintenance, select **Diagnostics**.
4. From the **Utility** list, select **Ping**.

The following screen displays:



5. Specify the following parameters for the ping utility:
   - **Target**. The IP address of the ping target computer.
   - **Ping Size**. The size of the ping packet.
   - **No. of Pings**. The number of times to ping the target computer.
   - **Ping Interval**. The time between pings.
6. Click the **Start Test** button.

   The ping results display:



7. To stop a ping test, click the **Abort Test** button.

➢ **To clear the results from the display:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Maintenance, select the **Diagnostics** button.
4. Click the **Clear Results** button.

Traceroute Utility

To display the route and measure transit delays of packets across an IP, run the traceroute utility.

➢ **To run a traceroute test:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

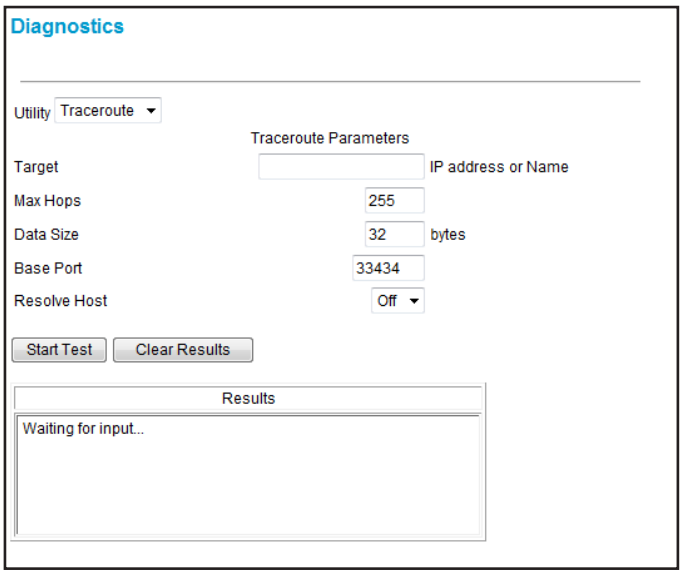
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

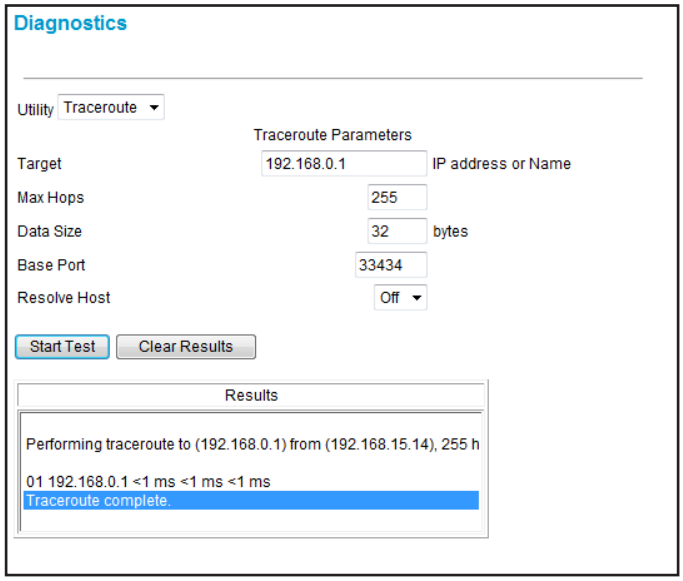
3. In the main menu, under Maintenance, select **Diagnostics**.
4. In the **Utility** list, select **Traceroute**.

The following screen displays:



5. Specify the following parameters for the traceroute utility.
   - **Target**. The IP address or host name of the computer you are tracing.
   - **Max Hops**. The maximum number of hops to allow when tracing the route.
   - **Data Size**. The input the size of the packet.
   - **Base Port**. The port number to send the packet to.
   - **Resolve Host**. Select **On** to resolve the host name to the IP address.
6. Click the **Start Test** button.

   The traceroute results display.



➢ **To clear the results from the display:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Maintenance, select **Diagnostics**.
4. Click the **Clear Results** button.

Advanced Settings

5

This chapter includes the following sections:

Advanced Wireless Settings

You can configure the wireless radio settings and other advanced settings.

➢ **To configure advanced wireless settings:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

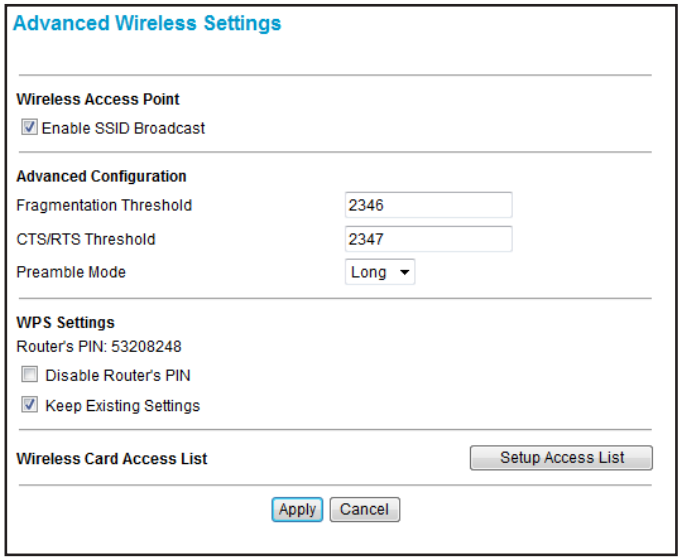
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **Wireless Settings**.

   The following screen displays:



4. Configure the settings described in the following table.

Advanced Wireless Settings		Description
Wireless Access Point	Enable	By default this check box is selected so that the modem router works as a wireless access point. You can turn off the wireless radio to disable access through this device, which can be helpful for configuration, network tuning, or troubleshooting activities.
Advanced Configuration	• Fragmentation Threshold • CTS/RTS Threshold • Preamble Mode	The default settings for these fields usually work fine. Change them only if you have a specific reason for doing so.
WPS Settings	Disable router's PIN	Selecting this check box disables the PIN that WPS clients use to connect to the modem router with the PIN method. Normally this check box is cleared, which is the default setting.
	Keep Existing Settings	If a WPS client is added, the modem router automatically selects this check box. When the **Keep Existing Settings** check box is selected, the SSID and wireless security settings remain the same when more WPS clients are added.
Wireless Access List	Set up Access List	Access control is disabled by default so that any computer that is configured with the correct SSID can connect.

5. Click the **Apply** button.

   Your changes are saved.

MAC Filtering

By default, the modem router allows any connected computer to access the Internet. The MAC Filtering screen lets you block specific computers, based on their MAC addresses, from access to the Internet on selected days and times.

➢ **To use MAC filtering to block Internet access for a specific computer:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

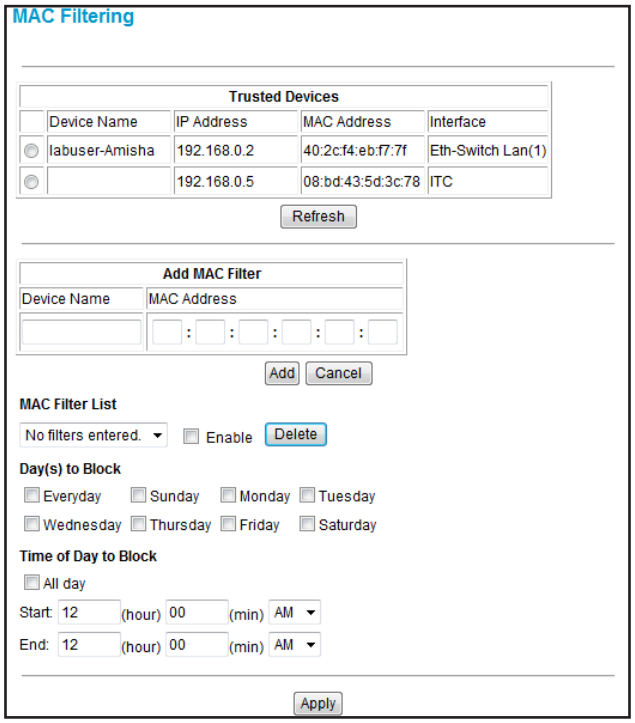
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **MAC Filtering**.

   The following screen displays:



   The Trusted Devices table shows computers that have access to the Internet through the modem router.

4. In the Add MAC Filter table, use one of these methods to specify computers to block:
   - If the computer is in the Trusted Devices table, select its radio button. The MAC address is added into the Add MAC Filter table.

- If the computer you want is not listed, click the **Refresh** button to update the Trusted Devices table.

  If the computer is still not listed, complete the **Device Name** and **MAC Address** fields.

5. Click the **Add** button.

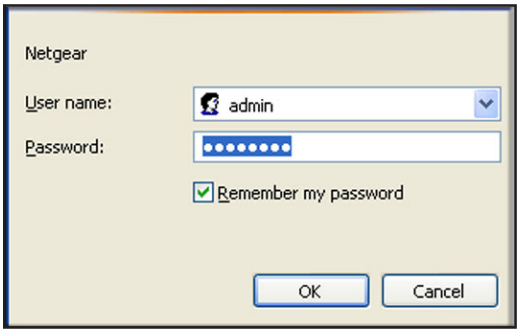
   The **Enable** check box for the computer in the **MAC Filter List** is automatically selected.

6. To block the computer, select the days and times:
   - **Days to Block**. Select the days to block the computer selected in the **MAC Filter List**. The default is **Everyday**.
   - **Time of Day to Block**. You can specify the time of day to block the computer. The default is **All Day**. Be sure that you clear the **All Day** check box if you want to enter specific times. The selected period applies to each day that you selected.
7. Click the **Apply** button.
8. Repeat these steps for all computers that you want to block.

➢ **To stop blocking a computer:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.



2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **MAC Filtering**.

   The MAC Filtering screen displays.

4. In the **MAC Filter** List, select the computer.
5. Clear its **Enable** check box.

   The computer remains in the list; however, it is not blocked.

6. Click the **Apply** button.

   Your changes are saved.

➢ **To remove a computer from the list:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **MAC Filtering**.

   The MAC Filtering screen displays.

4. In the MAC Filter List, select the computer.
5. Click the **Delete** button.
6. Click the **Apply** button.

   Your changes are saved.

IP Filtering

By default, any computer is allowed access to the Internet through your modem router. You can use IP filtering to block specific computers based on their IP addresses from access to the Internet on selected days and times.

➢ **To set up IP filtering:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

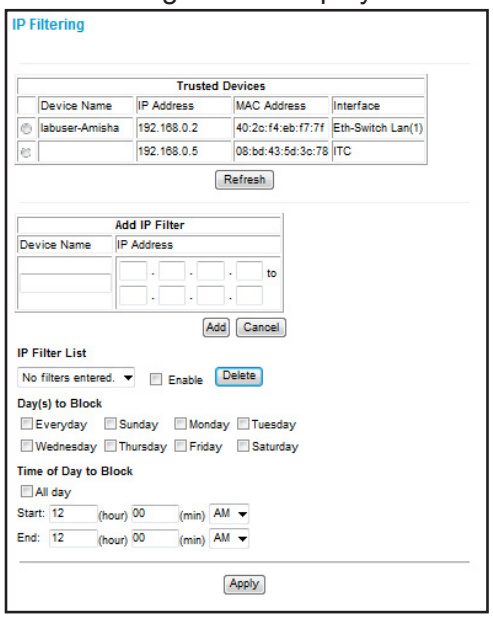
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **IP Filtering**.

   The following screen displays:



   The Trusted Devices table shows computers that are allowed access to the Internet through your modem router.

4. Add devices to the IP Filter List as needed:

   - If the computer you want to add appears in the Trusted Devices table, select its radio button to capture its IP address.

     If the computer you want is not listed, click the **Refresh** button to update the Trusted Devices table.

- If the name of the computer you want to add does not display, you can type a name for the computer you are adding; or enter the IP address of the computer you want to block.

5. Click the **Add** button.

   The **Enable** check box is automatically selected.

6. Select the days to block.
7. In the Time of Day to Block section, select a start time and an end time. This time range applies to each day you selected in Day(s) to Block section for the specific computer. **All day** is the default value. Clear the **All day** check box if you specify a start time and end time.
8. Click the **Apply** button.

   Your changes are saved.

➢ **To delete a device from the IP Filter List:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **IP Filtering**.
4. Select a device from the **IP Filter** list.
5. Click the **Delete** button.

   Your device is removed from the **IP Filter** list.

6. Click the **Apply** button.

   Your changes are saved.

Port Blocking

You can use port blocking to block outbound traffic on specific ports. Outbound traffic rules control access to outside resources from local users. The default rule is to allow all access

from the LAN side to the outside. You can use port blocking to add predefined or custom rules to specify exceptions to the default rule.

Note: The default rule allows any outbound traffic not blocked by rules that you create.

➢ **To add a custom service:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

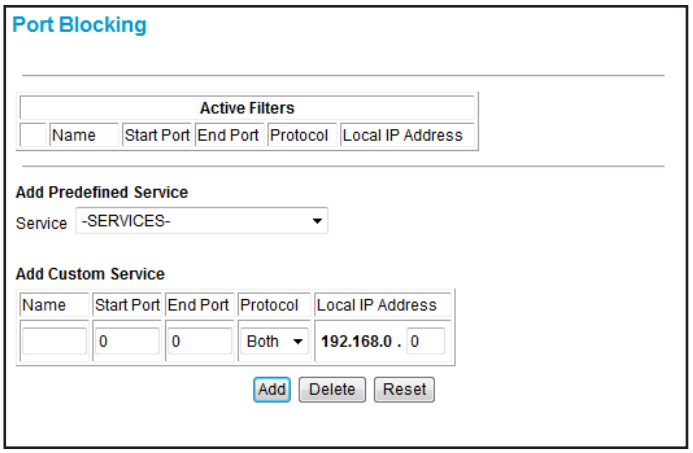
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **Port Blocking**.

   The following screen displays:



4. From the **Service** list, select the service you want to block.
5. To add a custom service that is not in the list of services, specify these settings in the Add Custom Service table:
   - **Name**. A name for the service.

- **Start Port**. The start of the range of ports for the service.
- **End Port**. The end of the range of port for the service.
- **Protocol**. The protocol for the ports:
  - **TCP**. TCP only.
  - **UDP**. UDP only.
  - **Both**. Both TCP and UDP.
- **Local IP Address**. The local IP address for the computer that is using the service.

6. Click the **Add** button.

   Your settings are saved. The Active Filters table now displays the list of ports that are currently blocked.

➢ **To delete a custom service from the Active Filters table:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **Port Blocking**.

   The Port Blocking screen displays.

4. Select the radio button in the Active Filters table for the custom service that you want to delete.
5. Click the **Delete** button.

   The custom service is deleted.

➢ **To clear all the fields in the Add Custom Service table or to unselect a radio button from the Active Filters table:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **Port Blocking**.

   The Port Blocking screen displays.

4. Click the **Reset** button.

   The **Add Custom Service** table is cleared, or the radio button you selected from the **Active Filters** table is unselected.

Port Forwarding

A firewall has default rules for inbound traffic (WAN to LAN) and for outbound traffic. Port forwarding affects the inbound rules. These rules restrict access from outsiders. By default, the modem router blocks access from outside except for responses to requests from the LAN side. You can use port forwarding to add rules to specify exceptions to the default rule.

Because the modem router uses Network Address Translation (NAT), your network presents only one IP address to the Internet, and outside users cannot directly address any of your local computers. However, by defining an inbound rule you can make a local server (for example, a web server or game server) or computer visible and available to the Internet. The rule tells the modem router to direct inbound traffic for a particular service to one local server or computer based on the destination port number. Directing traffic is also known as port forwarding.

Some residential broadband ISPs do not allow you to run server processes (such as a web or FTP server) from your location. Your ISP might check for servers and suspend your account if it finds active services at your location. See the ISP's Acceptable Use policy.

Pay attention to the following considerations before configuring port forwarding:

- If DHCP assigns the IP address of the local server computer, the address might change when the computer is rebooted. To keep the address from changing, you can assign a static IP address to your server outside the range that DHCP assigns, but in the same

subnet as your LAN. By default, the IP addresses from 192.168.0.2 through 192.168.0.9 are reserved for this purpose.

- Local computers must access the local server using the computers' local LAN address (192.168.0.XXX, by default). Attempts by local computers to access the server using the external WAN IP address fail.
- Port forwarding opens holes in your firewall. Enable only ports that are necessary.

➢ **To configure port forwarding and services for specific inbound traffic:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

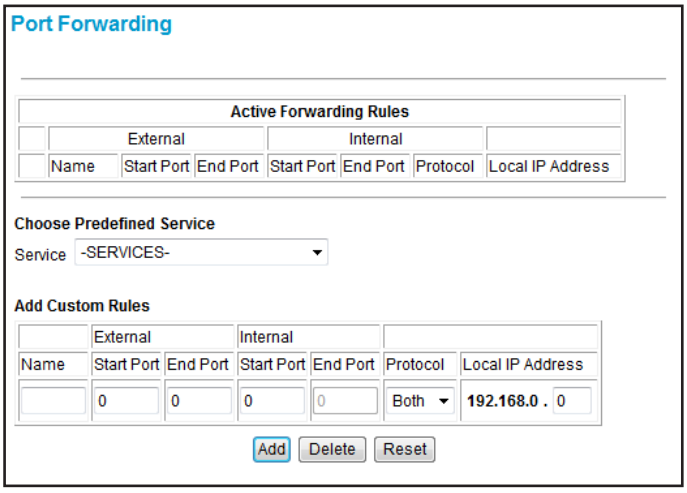
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **Port Forwarding**.
4. From the **Service** list, select the service for which you want to configure port forwarding.

   The following screen displays:



5. To add a custom rule that is not in the list of services, specify these settings in the Add Custom Rules table:

- **Name**. A name for the service.
- **Start Port**. The start port for the service.
- **End Port**. The end port for the service.
- **Protocol**. The protocol for the ports:
  - **TCP**. TCP only.
  - **UDP**. UDP only.
  - **Both**. Both TCP and UDP.
- **Local IP Address**. Complete the local IP address for the computer that is using the service.

6. Perform one of these actions:
   - Click the **Add** button. The Active Forwarding Rules table displays the list of forwarded ports.
   - To delete a service, select the radio button in the Active Forwarding Rules table for the service that you want to delete, and click the **Delete** button.
   - To reset the selection in the **Service** list and to clear all the fields in the Add Custom Rules, click the **Reset** button.

Port Triggering

Port triggering is an advanced feature that you can use to allow gaming and other Internet applications that the firewall would otherwise block. You must know the port numbers the application uses. Port triggering operates as follows:

1. A computer makes an outgoing connection using a port number defined in the Port Triggering table.
2. The modem router records this connection, opens the incoming port or ports associated with this entry in the Port Triggering List, and associates them with the computer.
3. The remote system receives the computer's request, and responds using a different port number.
4. The modem router matches the response to the previous request, and forwards the response to the computer. (Without port triggering, this response would be treated as a new connection request rather than a response. As such, it would be handled in accordance with the port forwarding rules.)

Note: Only one computer at a time can use port triggering. After a computer finishes using a port triggering application, a short time-out period passes before another computer can use the application.

➢ **To configure port triggering:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

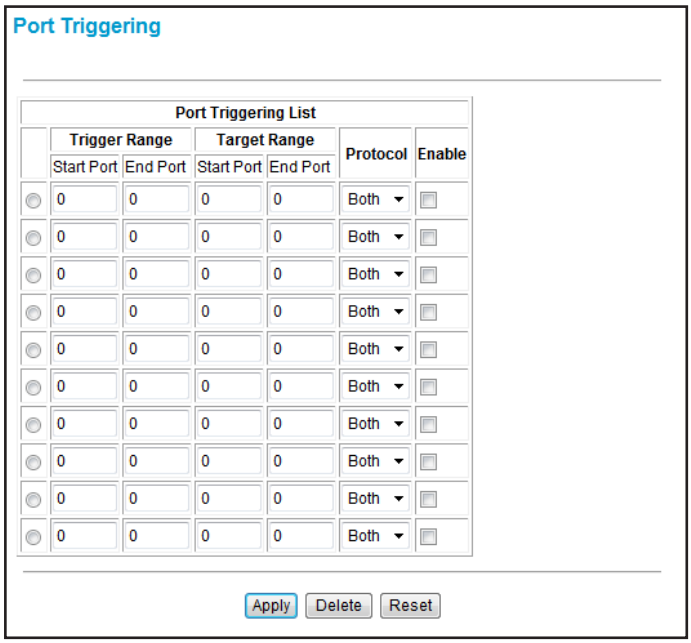
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **Port Triggering**.

   The following screen displays:



4. For each port trigger, enter the settings in the Port Triggering List:
   - **Trigger Range**. To specify the range of outgoing ports that are monitored to trigger the incoming port forwarding rule, enter the start port and end port.
   - **Target Range**. To specify the range of incoming ports that are opened when triggered, enter the start port and end port.
   - **Protocol**. Select the protocol for the ports:
     - **TCP**. TCP only.
     - **UDP**. UDP only.

- **Both**. Both TCP and UDP.

5. Select the **Enable** check box for the port trigger.
6. Click the **Apply** button.

   Your changes are saved and the port trigger is activated.

➢ **To remove a configured port trigger from the table:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **Port Triggering**.

   The port triggering screen displays.

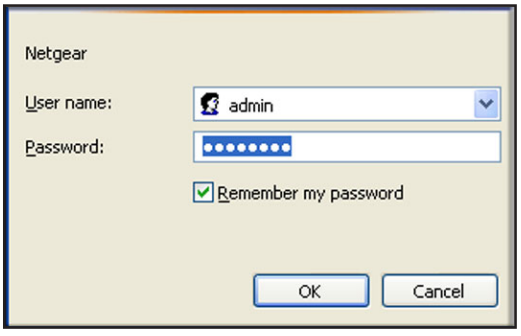
4. Select the radio button next to the port trigger.
5. Click the **delete** button.

   The port trigger is removed.

➢ **To return all trigger and target ranges to zero:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.



2. Enter the modem router user name and password.

The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The modem router main menu displays.

3. In the main menu, under Advanced, select **Port Triggering**.

   The port triggering screen displays.

4. Click the **Reset** button.

   The trigger and target ranges return to zero.

DMZ Host

You can set up a default DMZ computer. Specifying a default DMZ computer allows you to set up a computer that is available to anyone on the Internet for services that you have not defined. To minimize security risks, set up the DMZ host only if you are willing to risk open access. If you do not define a DMZ host, the modem router discards any undefined service requests.

➢ **To set up a DMZ host:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

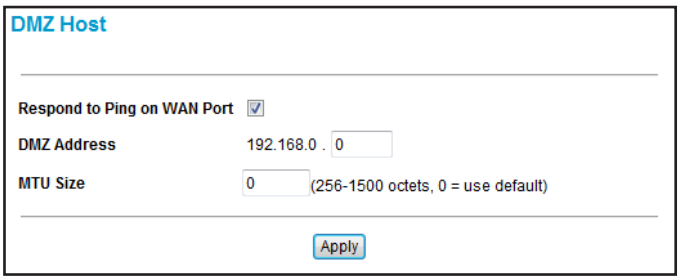
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **DMZ Host**.

The following screen displays:



4. Select the **Respond to Ping on WAN Port** check box.

   When you select this check box, the modem router, not the DMZ computer, responds to a ping request.

   For example, some systems tracking the performance of the broadband connections in terms of latency and packet loss need the modem router to reply to ping requests.

5. Type the last digits of the IP address in the **DMZ Address** field.

   The DMZ host feature is disabled when the last digit is zero.

6. Click the **Apply** button.

LAN IP Setup

You can configure LAN services such as the IP address of the modem router and DHCP. The TCP/IP and DHCP default values work fine in most cases.

Note: If you disable the DHCP server, assign a static IP address to your computer to reconnect to the modem router and enable the DHCP server again.

➢ **To configure LAN IP settings:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

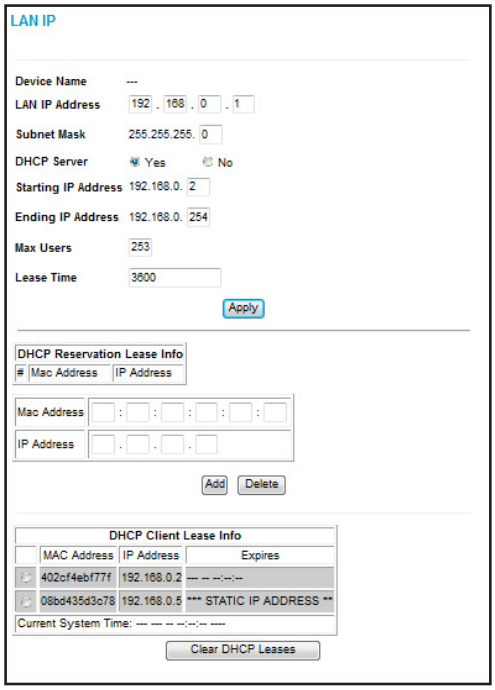
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **LAN IP**.

   The following screen displays:



4. Specify these settings:
   - **LAN IP Address**. The factory default setting is 192.168.0.1.
   - **Subnet Mask**. The network number portion of an IP address. Unless you are implementing subnetting, use 255.255.255.0 as the subnet mask.
   - **DHCP Server**. The **Yes** radio button is selected by default so that the modem router acts as a DHCP server, providing the TCP/IP configuration for all the computers connected to it.

     If you plan to assign IP addresses manually, or you have another DHCP server on your network, select the **No** radio button.

   - **Starting IP Address** and **Ending IP Address**. These fields specify the range in the IP address pool.
   - **Max Users**. The maximum number of users on the network.
   - **DHCP Lease**. For more information, see *Reserve an IP Address for DHCP Use* on page 69.
5. Click the **Apply** button.

Reserve an IP Address for DHCP Use

To reserve an IP address for DHCP use, enter the DHCP server reservation settings for the private LAN under DHCP Reservation Lease Info in the LAN IP screen.

➢ **To reserve an IP address for DHCP:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **LAN IP**.

   The LAN IP screen displays.

4. In the DHCP Reservation Lease Info section, enter the MAC address of the computer for which you want to reserve an IP address.
5. Enter the permanent IP address for the computer.
6. Click the **Add** button.

   Your changes are saved.

   The MAC address and IP address are displayed in the DHCP Client Lease Info table. The current system time is also displayed.

➢ **To delete an IP address from the DHCP Client Lease Info table:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **LAN IP**.

   The LAN IP screen displays.

4. In the DHCP Client Lease Info table, select the radio button for the MAC and IP address that you want to remove.
5. Click the **Delete** button.

   The information for the selected MAC and IP address is removed from the DHCP Client Lease Info table.

6. To remove all information from the DHCP Client Lease Info table, click the **Clear DHCP Leases** button.

LAN Switch

The modem router's LAN interference is a 10/100/1GBASE-T Ethernet switch. The switch ports are set to automatically negotiate speed and duplex communication with any connected device. You might want to configure the port if the devices do not auto-negotiate correctly.

➢ **To configure the switch ports:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

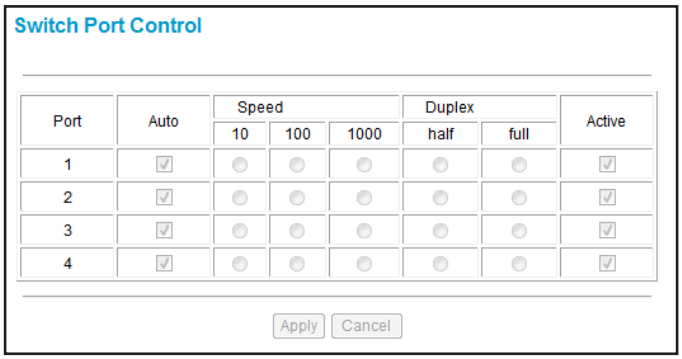
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **LAN Switch**.

   The following screen displays:



4. For each port, select the appropriate speed and duplex setting.
5. Click the **Apply** button.

   Your changes are saved.

➢ **To disable a LAN port:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **LAN Switch**.
4. In the Auto column corresponding to the port you want to disable, clear the check box.
5. Click the **Apply** button.

Configure Universal Plug and Play

Universal Plug and Play (UPnP) helps devices, such as Internet appliances and computers, access the network and connect to other devices as needed. UPnP devices can automatically discover the services from other registered UPnP devices on the network. With UPnP, you can specify the following:

- **Advertisement period**. Specifies how often the modem router broadcasts its UPnP information. The default is 30 minutes. Lower numbers ensure that control points have current device status at the expense of more network traffic. Larger numbers compromise the freshness of the device status but can significantly reduce network traffic.
- **Advertisement time to live**. The time to live for the advertisement, measured in hops (steps) for each UPnP packet that is sent. Hops are the steps a packet takes between routers. The number of hops can range from 1 to 255. The default value for the advertisement time to live is four hops, which should be fine for most home networks. If you notice that some devices are not being updated or reached correctly, you might need to increase this value slightly.

➢ **To configure UPnP:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

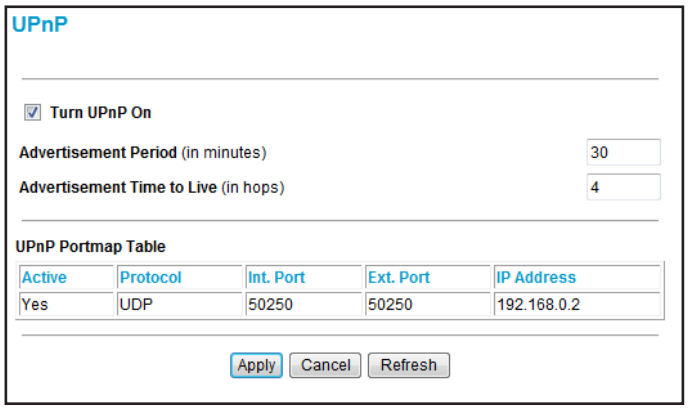
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The modem router main menu displays.

3. In the main menu, under Advanced, select **UPnP**.
4. Select the **Turn UPnP On** check box.

   By default, this check box is cleared. This prevents the modem router from allowing any devices to automatically control the resources, such as port forwarding, of the modem router.



5. Complete the **Advertisement Period (in minutes)** and **Advertisement Time to Live (in hops)** fields.

   The UPnP Portmap Table displays the IP address of each UPnP device that is accessing the modem router and which internal and external ports of the modem router that device opened. The UPnP Portmap Table also displays the protocol for the port that was opened and if that port is still active for each IP address.

6. To save your changes, click the **Apply** button.
7. To disregard any unsaved changes, click the **Cancel** button.
8. To update the UPnP Portmap Table and to show the active ports that are currently opened by UPnP devices, click the **Refresh** button to.

Set Networking Protocols

Network Time Protocol (NTP) is a networking protocol that synchronizes clocks between computer systems over packet-switched, variable-latency data networks.

➢ **To enable NTP:**

1. Type **http://192.168.0.1** in the address field of your web browser.

A login screen displays.

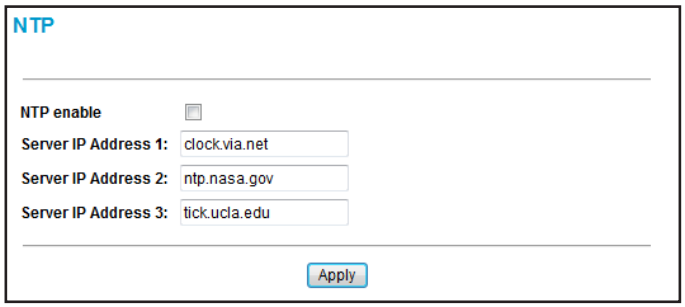
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **NTP**.

   The following screen displays:



4. Select the **NTP enable** check box.
5. Enter the IP server addresses:
   a. Enter the first server IP address in the **Server IP Address 1** field.
   b. Enter the second server IP address in the **Server IP Address 2** field.
   c. Enter the third server IP address in the **Server IP Address 3** field.
6. Click the **Apply** button.

   Your changes are saved.

Enable Network Address Translation

Network Address Translation (NAT) provides one-to-many translation of IP addresses between devices. This means that your network presents only one IP address to the Internet, and outside users cannot directly address any of your local computers. Enable NAT to allow multiple computers on your network to access the Internet using a single public IP address. NAT is enabled by default.

➢ **To disable NAT:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

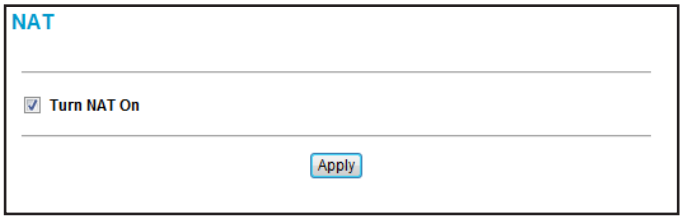
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under Advanced, select **NAT**.

   The following screen displays:



4. Clear the **Turn NAT On** check box.
5. Click the **Apply** button.

Access a USB Device on the Network

You can access a USB device connected to the modem router USB port.

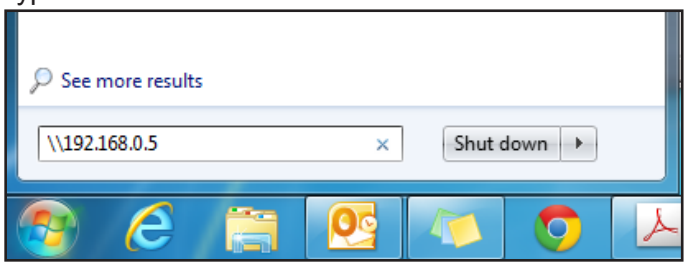
➢ **To access a USB device from a Windows computer:**

6. Insert a USB drive into the USB port on the front or back of the modem router.
7. If your USB drive has a power supply, you must use it when you connect the USB drive to the modem router.

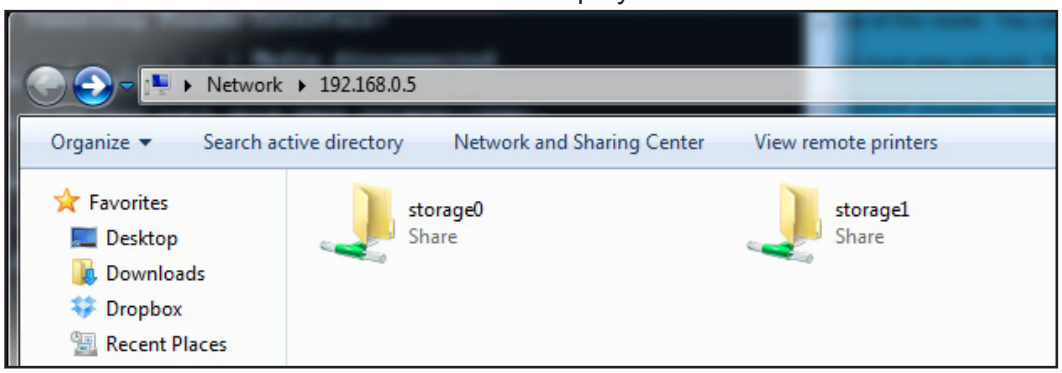
   When you connect the USB drive to the modem router USB port, it might take up to two minutes before it is ready for sharing. By default, the USB drive is available to all computers on your local area network (LAN).

8. Click the **Start** button on your computer's desktop.

9. Type **\\192.168.0.5** in the search field.



Your modem router network's USB folder displays:



Note: If two USBs are connected to the modem router, the first USB connected to the modem router is called **storage0** and the second USB is called **storage1**.

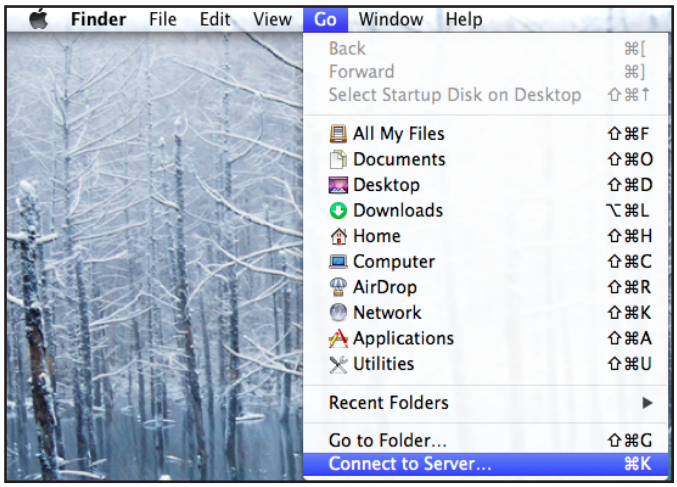
➢ **To access a USB device from a MAC computer:**

1. Insert a USB drive into the USB port on the front or back of the modem router.
2. If your USB drive has a power supply, you must use it when you connect the USB drive to the modem router.

   When you connect the USB drive to the modem router USB port, it might take up to two minutes before it is ready for sharing. By default, the USB drive is available to all computers on your local area network (LAN).

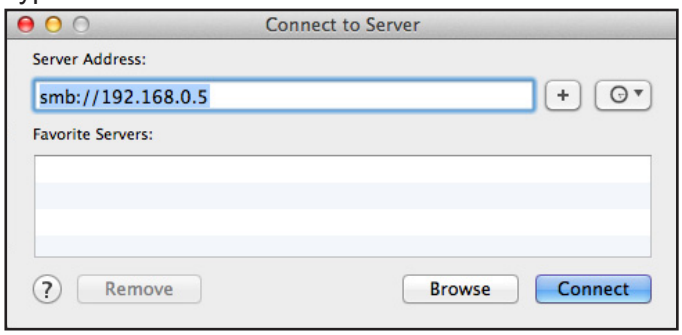
3. On your Mac, go to **Finder**.

4. Select **Go > Connect to Server**.

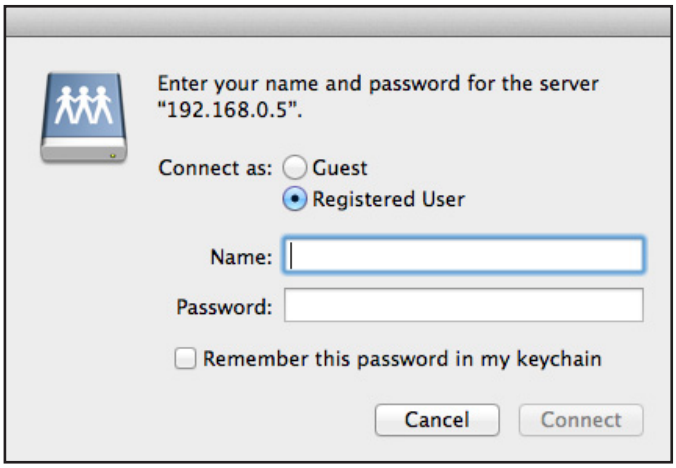


The **Connect to Server** screens displays.

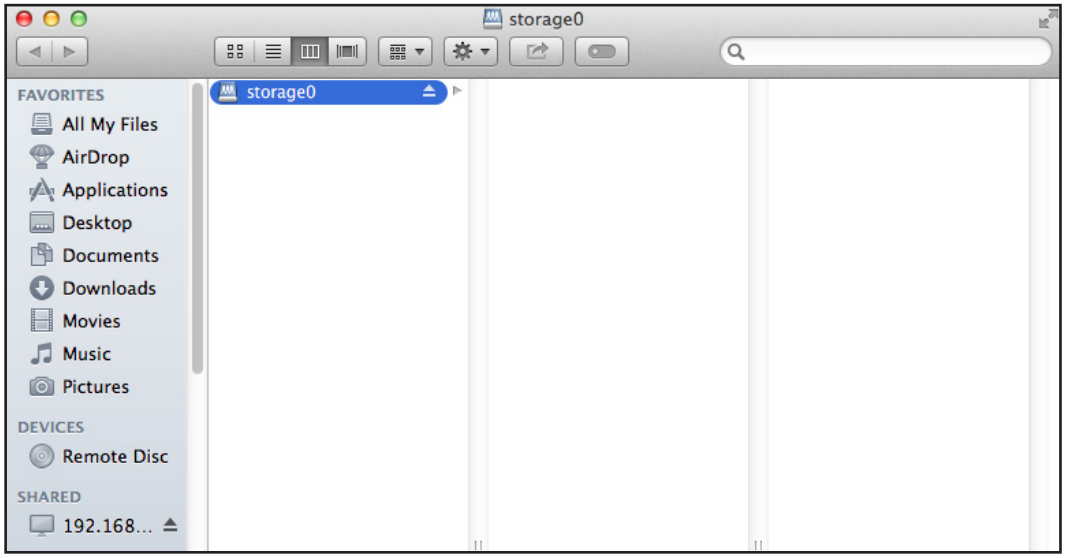
5. Type **smb://192.168.0.5** in the **Server Address** field.



6. Click the **Connect** button.
7. When prompted, select the **Guest** or **Registered User** radio button, enter your name and password, and click the **Connect** button.



Your modem router network's USB folder displays:



Note: If two USBs are connected to the modem router, the first USB connected to the modem router is called **storage0** and the second USB is called **storage1**.

➢ **To safely remove a USB device:**

1. Type **http://192.168.0.1** in the address field of your web browser.

   A login screen displays.

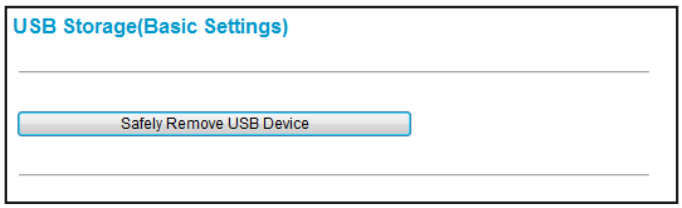
2. Enter the modem router user name and password.

   The default user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The modem router main menu displays.

3. In the main menu, under USB Storage, select **Basic Settings**.

The following screen displays:



4. Click the **Safely Remove USB Device** button.

   You can remove your USB device from the modem router.

Troubleshooting

6

This chapter gives information about troubleshooting your modem router. For the common problems listed, see the section indicated:

- Have I connected the modem router correctly?

  See *Basic Functions* on page 81.

- I cannot access the modem router configuration with my browser.

  See *Connect to the Modem Router's Main Menu* on page 81.

- I have configured the modem router but I cannot access the Internet.

  See *Troubleshoot the ISP Connection* on page 82.

- My modem router is not responding.
- See *Troubleshoot a TCP/IP Network Using a Ping Utility* on page 82.

If you cannot remember the modem router's configuration password or you want to clear the configuration and start over again, see *Factory Default Settings* on page 86.

Tip: NETGEAR provides helpful articles, documentation, and the latest software updates at *http://support.netgear.com*.

Basic Functions

After you have turned on power to the modem router, do the following:

1. Check to see that the Power LED is lit.
2. Check that the numbered Ethernet LEDs light momentarily.
3. After a few seconds, check that the LEDs are lit for any local ports that are connected.

The following table provides help when you are using the LEDs for troubleshooting.

Table 2. LED behavior

LED Behavior	Action
All LEDs are off when the modem router is plugged in.	• Make sure that the power cord is properly connected to your modem router and that the power supply adapter is properly connected to a functioning power outlet. • Check that you are using the 12 V DC power adapter supplied by NETGEAR for this product. If the error persists, you have a hardware problem. Contact technical support.
All LEDs stay on.	Clear the modem router's configuration to factory defaults. This sets the modem router's IP address to 192.168.0.1. See *Factory Default Settings* on page 86. If the error persists, you might have a hardware problem. Contact technical support.
LAN LED is off for a port with an Ethernet connection.	• Make sure that the Ethernet cable connections are secure at the modem router and at the hub or computer. • Make sure that power is turned on to the connected hub or computer. • Be sure that you are using the correct cable.
Internet LED is off and the modem router is connected to the cable television cable.	• Make sure that the coaxial cable connections are secure at the modem router and at the wall jack. • Make sure that your cable service provider provisioned your cable Internet service. Your provider should verify that the signal quality is good enough for cable modem service. • Remove any excessive splitters you might have on your cable line. It might be necessary to run a "home run" back to the point where the cable enters your home.

Connect to the Modem Router's Main Menu

If you are unable to access the modem router's main menu from a computer on your local network, check the following:

- Check the Ethernet connection between the computer and the modem router as described in *Basic Functions* on page 81.

- Make sure that your computer's IP address is on the same subnet as the modem router. If you are using the recommended addressing scheme, your computer's address is in the range of 192.168.0.10 to 192.168.0.254.

Note: If your computer's IP address is shown as 169.254.x.x:
Recent versions of Windows and Mac OS generate and assign an IP address if the computer cannot reach a DHCP server. These autogenerated addresses are in the range of 169.254.x.x. If your IP address is in this range, check the connection from the computer to the modem router and reboot your computer.

- If your modem router's IP address has been changed and you do not know the current IP address, clear the modem router's configuration to factory defaults. This sets the modem router's IP address to 192.168.0.1. For more information, see *Factory Default Settings* on page 86.
- Make sure that your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click the **Refresh** button to make sure that the Java applet is loaded.
- Try quitting the browser and launching it again.
- Make sure that you are using the correct login information. The modem router user name is **admin,** and the default password is **password**, both in lower case letters. (Caps Lock should be off when you enter these.)

If the modem router does not save changes you have made, try the following:

- When entering configuration settings, be sure to click the **Apply** button before moving to another screen, or your changes are lost.
- Click the **Refresh** or **Reload** button in the web browser. The changes might have occurred, but the web browser might be caching the old configuration.

Troubleshoot the ISP Connection

If your modem router is unable to access the Internet and your Internet LED is lit, you might need to register the cable MAC address or device MAC address of your modem router with your cable service provider.

Additionally, your computer might not have the modem router configured as its TCP/IP modem router. If your computer obtains its information from the modem router by DHCP, reboot the computer and verify the modem router address. For more information, see *Reserve an IP Address for DHCP Use* on page 69.

Troubleshoot a TCP/IP Network Using a Ping Utility

Most TCP/IP terminal devices and routers contain a ping utility that sends an echo request packet to the designated device. The device then responds with an echo reply. You can

easily troubleshoot a TCP/IP network by using the ping utility in your computer or workstation.

Test the LAN Path to Your Modem Router

You can use ping to verify that the LAN path to your modem router is set up correctly.

➢ **To ping the modem router from a computer running Windows 95 or later:**

1. From the Windows toolbar, click the **Start** button and select **Run**.
2. In the field provided, type **ping** followed by the IP address of the modem router, as in this example:

   ping 192.168.0.1

3. Click the **OK** button.

   You should see a message like this one:

   ```
   Pinging <IP address> with 32 bytes of data
   ```

   If the path is working, you see this message:

   ```
   Reply from < IP address >: bytes=32 time=NN ms TTL=xxx
   ```

   If the path is not working, you see this message:

   ```
   Request timed out
   ```

   If the path is not working correctly, you could have one of the following problems:

   - Wrong physical connections. Check the following:
     - Make sure that the LAN port LED is lit. If the LED is off, see *Basic Functions* on page 81.
     - Check that the corresponding LEDs are lit for your network interface card and for the hub ports (if any) that are connected to your workstation and modem router.
   - Wrong network configuration. Check the following:
     - Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer or workstation.
     - Verify that the IP address for your modem router and your workstation are correct and that the addresses are on the same subnet.

Test the Path from Your Computer to a Remote Device

After verifying that the LAN path works correctly, test the path from your computer to a remote device. From the Windows Run dialog box, type:

ping -n 10 *<IP address>*

where <*IP address*> is the IP address of a remote device such as your ISP's DNS server.

If the path is functioning correctly, replies as in the previous section are displayed. If you do not receive replies, do the following:

- Check that your computer has the IP address of your modem router listed as the default modem router. If the IP configuration of your computer is assigned by DHCP, this information is not visible in your computer's Network Control Panel. Verify that the IP address of the modem router is listed as the default modem router.
- Check to see that the network address of your computer (the portion of the IP address specified by the netmask) is different from the network address of the remote device.
- Check that your Internet LED is lit.

Supplemental Information

A

This appendix includes the following sections:

- *Factory Default Settings*
- *Technical Specifications*

Factory Default Settings

You can return the modem router to its factory settings. On the rear panel of the modem router, press and hold the **Reset** button for over seven seconds. The modem router resets and returns to the factory configuration settings shown in the following table.

Table 3. Factory default settings

Feature	Parameter	Default
Modem Router login	User login URL	http://192.168.0.1
	User name and password (case-sensitive)	admin/password
Local network (LAN)	LAN IP	192.168.0.1
	Subnet mask	255.255.255.0
	DHCP server	Enabled
	DHCP starting IP address	192.168.0.2
	DHCP Ending IP address	192.168.0.254
Firewall	Inbound communication from the Internet	Disabled (except traffic on port 80, the HTTP port)
	Outbound communication to the Internet	Enabled (all)
	Source MAC filtering	Disabled
Internet connection	WAN MAC address	Use default hardware address.
	WAN MTU size	1500

Table 3. Factory default settings (continued)

Feature	Parameter	Default
Wireless	Wireless communication	Enabled
	SSID name	Appears on the label of the modem router.
	Security	WPA/WPA2 The default WPA/WPA2 password appears on the label of the modem router.
	Broadcast SSID	Enabled
	Transmission speed	Auto[1]
	Country/region	United States (varies by region)
	RF channel	Auto
	Operating mode	n, g, and b
	Data rate	Best
	Output power	Full
	Access point	Enabled
	Authentication type	Open System
	Wireless Card Access List	All wireless stations allowed

1. Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput varies. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, might lower actual data throughput rate.

Technical Specifications

The following table describes the technical specifications for the modem router.

Table 4. Technical specifications

Component	Specification
Network protocol and standards compatibility	Data and routing protocols: TCP/IP, DHCP server, and client, DNS relay, NAT (many-to-one), TFTP client, VPN pass-through (IPSec, PPTP)
Power adapter	• North America (input): 120V, 60 Hz, input • All regions (output): 12 V DC @ 2.5A output 30W maximum
Physical specifications	• Dimensions: 10.2 by 6.49 by 3.65 in. (259.17 by 164.77 by 92.72 mm) • Weight: 1.30 lb (590 g)
Environmental	• Operating temperature: 32° to 140°F (0° to 40°C) • Operating humidity: 90% maximum relative humidity, noncondensing • Electromagnetic emissions: Meets requirements of: FCC Part 15 Class B.

Component	Specification
Interface	Local: 10BASE-T, 100/1000BASE-Tx, RJ-45 USB 2.0/1.1 function 802.11n/g/b
	Internet: DOCSIS 3.0. Downward compatible with DOCSIS 2.0, 1.1, and 1.0